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Vol. 13. Columbus, September 1, 1860. No. 1.

Original Communications.

Address of O. Wendell Holmes, M.D., before the Massachusetts Medical Society. Remarks on by Senior Editor.

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In order that the reader may comprehend something of the origin and progress of the doctrines which this poet of Massachusetts has lately been engaged in ventilating for the edification of the medical profession in the old Bay State, we will refer a little to history. It will be seen that the "Address before the Massachusetts Medical Society" is simply a rehash of old talk—simply the prose of a

XUM

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XUM

philosopher of the early part of the eighteenth century turned into Boston poetry.

To Sir John Forbes, M.D., Fellow of the Royal College of Physicians, London, belongs the credit or discredit (just as the reader chooses) of having called public attention to a consideration of "*Nature and Art in the Cure of Disease.*" This he did in a work of some two hundred and fifty pages, issued from the London press in 1857, and from the press of this country the succeeding year. In the Introduction to this work Dr. Forbes remarks:

"Having been now actively engaged in the practice of medicine for the long period of fifty years, and having derived therefrom much of the prosperity and happiness that have been my fortunate lot in life, I feel that my profession has claims on me for much more than I have been able to give it, and as, at my time of life and in my present state of health, I have no right to look forward to the acquisition of further knowledge in the same field, it is incumbent on me to communicate now any information I may possess, if I am to communicate it at all. * * * And in this mood I would fain regard the present book in the light of *A Legacy to my Younger Brethren*, which, slight as it is, may not be found altogether unworthy of their acceptance."

This Legacy offered by Dr. Forbes to his younger brethren, as the result of fifty years' experience in the practice of medicine, amounts to this: *a book of two hundred and fifty pages, devoted to an attempt to revive* the fanciful system of George Ernest Stahl, Professor of the Practice of Medicine in the University of Halle, in Germany, during the early part of the eighteenth century.

Lest the reader should suppose that we have made a draw on his credulity, we will extract from Dr. Forbes' work:

"It will be seen that the system of treatment which I here advocate, more especially in acute diseases, and which my own observation and experience have led me to prefer, *is exactly* that followed and recommended by the *celebrated Stahl* a century and a half ago, in his admirable work entitled '*Ars sanandi cum Expectatione opposita Arti curandi nûda Expectatione.*'"

We will look now a little into this celebrated German's notions:

Of Stahl's Physiology.—"The motions and functions of the human body are governed entirely by the '*Rational Soul*,' to many of the motions of which it is not conscious. The *Soul* being extended through the medium of the nerves to all parts of the body,

perceives every noxious impression or disorder that occurs in the system, and like a faithful guardian calls such powers of the system into action as are qualified to remove or obviate the noxious impressions, and to preserve its salutary operations."

Again: "The act by means of which life is sustained, and the soul fulfills its functions, is absolutely repugnant to matter, and agrees well with the nature of the mind. That act, as observation shows, is motion; by it the mixture of the humors is preserved in integrity. The soul acts on the body and in the body; compares reasons, and moves from one object to another; in a word, it is '*perpetual motion.*' Now all motion is an immaterial act, which can only have for a principle an immaterial substance itself."

Stahl's Therapeutics.—"True *medical* or artistic expectation is that which, while carefully observing the salutary operations of Nature, is content to do so without offering assistance where not needed, or limiting this assistance to the giving of prudent counsel, such as recommending to the sick temperance and patience, yet in the proper place recognizing, not merely the necessity, but the propriety of artificial interference, and yielding it accordingly; still, however, in every case having due regard to the proceedings and coöperations of Nature, according to reason and approved experience."

Again: "As to the *methodus medendi*, or indication of treatment to be followed, it is clear that it must have reference to the disease itself, and not to drugs or other remedies. The first consideration is: is it necessary to prescribe a remedy at all? If so, we have then to consider, not so much what remedy is best, as what effect is desired; and this is to be sought for not on pharmaceutical but on pathological ground. We are to judge according to the peculiar character of the disease, when and in what order the operation indicated is to be instituted; and then and not till then is it time to look about for the instrument with which we are to work."

The following remarks by Gideon Harvey, a cotemporary of Stahl, are accepted as truthfully setting forth the "*Expectation*" system of practice:

"Expectation is the applying of remedies that do little hurt and less good, from which the patient day by day frustraneously expecting relief and benefit, is at last deferred so long that *nature* and *time* have partially or entirely cured the disease.

"The real remedies of the Expectant physician are confident and

bold assertions that the patient shall be cured; though his scrowles or recipes can conduce no more to the recovery of health than a Laplander's charm to procure a fair wind."

In regard to what we have quoted of the doctrines of Stahl, the author of "Nature and Art in the cure of Disease" remarks:

"I cannot here avoid expressing my admiration of many of the numerous productions of Ernest Stahl, and particularly of the treatise on Expectation. Stahl's works contain more of original truth in regard to the nature and treatment of diseases, and in regard to the proper method of studying them, than any other writings of his time."

Here, then, we have the origin of the nonsense which Sir John Forbes has revived in England, and which has been re-echoed by Drs. Jacob Bigelow and O. Wendell Holmes of this country.

Who supports these doctrines at the present day?

We have no disposition to detract improperly from the reputation of any one, much less from a fellow-laborer in medical science. But when men set themselves up as the oracles of a learned profession—a profession the members of which have contributed more than half of what is to-day known of *science*, we have a right to look a little into their claims to confidence—into their pretensions to be "Teachers in Israel."

Dr. Forbes is an English physician; was editor for some time of the "*British and Foreign Medico-Chirurgical Review.*" In this work he wrote some articles that were looked upon at the time as heterodox. They were on *Homœopathy*, *Allopathy*, and *Young Physic*. These articles were regarded at the time of their appearance as also foreshadowing the introduction of a new system by their author. The reader of them could plainly discern a restive spirit, and strong desire for things strange and novel. Taken altogether, they impugned regular scientific medicine, *by the usual fallacies*, but proposed nothing in its place. The substitute, however, as we have seen, in time comes. The crudities of Stahl are paraded before us as a substitute for scientific medicine, by Dr. Forbes, as though they were really so many axioms, so many truths indorsed by the most rigid experiments, and tested by the most unequivocal results of actual practice. We are not told that Stahlism had its day, and that it was found wanting; that when put into practice, the results were those of a mere *negation* of medicaments; that it was condemned as worthless by the physicians of the time, and that finally Gideon Harvey, on even theoretical

grounds, refuted it, and so completely, that it is now only known in connection with medical fallacies. If Dr. Forbes imagines that his fifty years' experience in the use of drugs, and the high position he attained in the profession, is prestige sufficient to give currency to doctrines that converts the vocation of the physician into that of a mere *meditation on death*, he is mistaken. From what evidence there is before us, we conclude that Dr. F., with all his experience, was an inexperienced practitioner, fond of generalities and short cuts; that he overlooked the real nature of disease and the curative powers of drugs; and in our humble opinion was a routine practitioner who got tired of ploddings, and impatient at the slow accretions around the nuclei of medical science.

Those who have advocated the theories of Dr. Forbes in this country and who are now proclaiming them through the press, have not yet worked their way, in any department of science, to a respectable position. They are mostly flippant talkers, or ready writers, without much sense as to the course of studies necessary to form just views of medicine; and frequently they are without any clinical experience at all. O. W. Holmes is a teacher of Anatomy in a medical school, practices as we understand but little, if any; and has quite a reputation as a poet in his neighborhood. His principal occupation is that of a "*sensation* Essayist." Of the tendency of the people of his region to speculation and skepticism, he has availed himself freely. He figures in the "*Autocrat*" on a great variety of subjects, and scarcely ever quits a moral subject without leaving it worse than he found it. He injects, indeed, his nonsensical infidelity into his readers with great facility—and mistakes in every thing he writes the mission of the mere empty-headed objector, for that of the philosopher. What neophyte in medicine should be governed by the opinions of such a writer? Until he comes forward giving evidence of capacity to judge of medical truth, and is able to show some respectable service in conflict with disease at the bedside, we beg leave to be excused from attaching any great importance to his notions. Forbes, Hanneman, and Bigelow, a trio of theorists, have waked the Boston bard from his slumbers, and the right-minded physicians of New England will now have a trouble to get rid of his noise and scandal. Of course they feel very much complimented with the *inference* deducible from his "*Address before the Massachusetts Medical Society*"—*viz:* that physicians are all "knaves or fools"!!

XUM

WHAT IS THE CHARACTER OF THE EVIDENCE IN SUPPORT OF THESE DOCTRINES?

If *Stahl* could have established his assertions by the force of the lowest grade of evidence, they would not have been so soon abandoned. He predicated them all upon the basis of ethereal speculation, without having paid any attention to the truth of premises. The same is true of the efforts of Dr. Forbes. He tells us that he has had fifty years' experience in the practice of medicine; but what is experience without capacity to judge of results? Who can estimate any thing accurately in regard to the power of drugs, if he has concluded beforehand that they have no power?

We will look for a moment into the truth of the hypotheses proposed by Dr. Forbes as the basis of "a rational treatment of disease."

In the first place we are treated in his work to a disquisition on the old, thread-bare subject *Life; second*, to an attempt to explain the *essence of Disease.*

Upon neither of these questions do we notice any thing from the pen of Dr. F. that produces much illumination. Indeed, in his attempt to define Life he ignores entirely what is said by our exact Chemico-Vital friends of the present day who claim some attention for their views, and goes back at once to the German philosophers. In a previous quotation we have seen what Stahl taught on this subject. In a few words he taught the identity of *Life, Mind* and *Motion*, and that the movements of the organism under the influence of Life is a fine example of "*Perpetual* Motion." We fail to see that such notions are any better than those of Hippocrates, who taught two thousand years ago—"The human body has no determined commencement. Each of its integral parts may be regarded equally as the first or last, for in a described circle, it is impossible to find either beginning or end;" or than those of the Iatro-Chemists, who present Life and *fermentation* as being identical; or than those of Iatro-Mechanics, who regard Life as consisting in *Muscular* contraction.

We might here present a great array of opinions on this subject from physicians, physicists, and philosophers, any of which would be just as plausible as those of Stahl and Forbes; but it is unnecessary; for the reason, that our information does not extend to immaterial things. We might reason forever upon such, and

the effort would amount to nothing, *pro* or *con*. But is it not a little surprising that a philosopher, who has had the rays of science beaming upon him for half a century, and who has given evidence of being something of a Journalist, should have proposed any of this ethereal nonsense concerning the essence of life as the foundation of an attempt to create a new era in Medicine. We had supposed our cup, of the merely fanciful, full; and that all the efforts would now be confined to things substantial, practical. We were little, really, prepared for an avalanche of old, exploded dogmas; but the wonder after all, is their recent source.

The *pathology* which Dr. Forbes adopts, or rather, his *definition of disease*, like what he has said on Life, differs in no respect from what we have had offered for the consideration of the profession by a variety of authors of different degrees of capacity. Here it is: "When the structure or function deviates from the normal type, the individual is in a *state of disease*." Now, nobody denies this, for it is a kind of an axiom that a Fejee Islander would consent to with great cordiality. But the inference drawn from it, that disease is not an *entity*, is not quite so obvious. What is added to our knowledge by such an assertion? The sickness of an individual is a reality, if not an "entity;" and whether this proceeds, as the Good Book suggests, from one, or from "Seven Devils" rollicking without halters on through the organism cutting up Jack generally; or from rents, cracks, or loosened screws incident to the play of organs Dr. F. knows not; and yet perhaps he knows just as much of such things as any one else.

The Historian and Symptomologist will tell us that certain phenomena indicate the presence of disease; the Morbid Anatomist, that disease consists in changes of structure; the Chemist, that it is connected with variations in the quantity and quality of molecules, and that he once in a while poisons it; and the Therapeutist, that it is an entity, an evil genius, an unfriendly visitor, that he sometimes seizes upon, "binds hand and foot," emasculates, and pitches out of the organism. Any one of these explanations, as far as we can see, is just as near the truth, as that of Dr. F. Each one of them has been turned over from generation to generation by those who have taken a fancy to such subtleties, but thus far, they have only served the purpose of the "*Tub* for the Whale."

As a consequence of Dr. Forbe's notions of Life, Disease, etc., he proposes a radical change in the treatment of disease. He con-

XUM

demns in very coarse and positive terms the use of all drugs that tend to limit or *cut short* the disease. "Our estimate," he remarks, "of the *Extinguishing* treatment as a guide in practice, or even of a modification of it, is of a damnatory character, whether the application be made to acute or chronic cases—the slight amount of good ever derived from it being counterbalanced by a huge sum of evil." To take the place of all such interference, which he regards as *perturbative* and *exhaustive*, he proposes what he is pleased to call the "*Auxillary* or *Mild Treatment*," which denies the efficacy of drugs, and directs that "no attempt by any vigorous measures to alter the course of the morbid processes, so long as they keep within the limit of safety, and when they transgress or threaten this limit, only then to endeavor to modify them by such mild measures as if *they fail in doing no good* will do no harm."

Here, we have in a few words, the old "*vis medicatrix naturæ*" exhumed and brought up again, as being fully competent to every emergency, acute or chronic, ephemeral or long continued—Nature is the Autocrat to do every thing; Art nothing. The vocation of the physician is to stand by, watch, meditate upon the ravages going on, but interpose no obstacles, for the fear, that by so doing, he may do harm.

How near do such speculations agree with what is known of the treatment of disease, and with what will stand the test of time? Since the discovery of Peruvian bark, we have what may be called an "Extinguishing" drug for intermittent and several forms of remittent fever—a drug, too, that never disappoints expectation. It matters nothing as to what you regard as being the essence of the disease, the effects of the drug are uniform and *curative*. Arsenic, with about the same certainty, will also cure ague. Chlorotic anemia is curable by iron, Bronchocele by iodine, Syphilis by mercury, Tertiary Syphilis by the iodide of potassium, Gout by colchicum, and Scorbutis by fresh lemon juice.

Here we have a starting point in regard to the powers of drugs; and who can set limits to it? If we have, for all the diseases of the malarial regions of the world, discovered a remedy—if we have, for one of the most loathsome diseases of a corrupt crowded population, and for such formidable maladies as anemia and bronchocele already found medicaments, who can doubt our ultimate triumph, if we are faithful, over all the principal ills that afflict humanity? Is not such a desideratum simply reduced to the matters of Patience, Industry and Time?

We are told that the Extinguishing system, or the Heroic system, is *perturbative* and *exhaustive*, and that as much evil as good, in the end, results from it.

HEROIC PLAN OF TREATMENT.

Some very strange notions have obtained with reference to the *Heroic* plan of treatment. Amateur physicians and uninformed theorists associate "heroic" practice with the idea of immense doses of calomel, indiscriminate or copious blood-letting, emetics and purgatives without regard to circumstances. To those who are desirous of the truth, it is only necessary to state, that abuse here has been confounded with use. The same disease, from a great variety of circumstances, varies in the amount or quantity of of medicine requisite to its cure. In one case three grains of sulph. quinia will cure ague; in another, it will require six grains; in another, twelve; in another, twenty-four; and in another, perhaps, fifty. Now what more is there of heroism in the administration of fifty than there is of three grains? A certain quantity of the drug is required in order to accomplish the cure, and hence such a system of practice is most properly denominated the *Curative, Scientific,* or *Sensible.* What is true of quinia in intermittent fever, as regards quantity, is true of all other specifics, of pseudo-specifics, and of all modifying agents. The dose must rise or fall with the emergency; the quantity must be varied to suit the circumstances. If we have a congestive intermittent, in an adult of vigorous constitution, the paroxysms of which anticipate each other, is there a sensible man living who would rely on half-grain doses of Peruvian bark administered two or three times a day? And why not? Because in his own hands, and in the hands of all, most competent as practitioners, such practice has proved itself inert and useless. Opium, Iron, Chloroform, Digitalis, Veratrum, Emetics, Cathartics, Diuretics, Diaphoretics, are not exceptions to what we have said of quinia. After all of the circumstances of a case are duly estimated, the *quantity* of medicine is positive. If a poisonous dose of arsenic cannot be rendered harmless in the stomach by one-fourth grain doses of the Hydrated Peroxide of Iron; if half an ounce of Nitrate of Silver cannot be rendered harmless with ten grains of common salt; if an ounce of Oxalic Acid cannot be neutralized by a grain of Carbonate of Magnesia, why should we conclude that drugs, whether operating on the

XUM

Extinguishing, Alterative, or *Antidotal* principle, can accomplish results irrespective of *quantity?* Nor should the large doses of the per oxide of iron, given in cases of poisoning by arsenic, or the large doses of common salt, given in poisoning by nitrate of silver be regarded as "heroic." They are simply the scientific quantity required.

We say, then, that we are tired of the senseless clamor about "heroic doses." It has simply served the purposes of the timid, the inexperienced, the uninformed. The subject of doses has been before the profession since any thing has been known of the power of drugs; and we have in our books a digest of it that annually undergoes revision by learned men, who meet especially for that purpose, and whose opinions are entitled to consideration.

The Mild Plan of Treatment.

This, as Dr. Forbes tells us, is about synonymous with Homœopathy, or the do-nothing plan. It is founded, as we have seen, on the autocracy of Nature, on the competency of nature to cure all diseases to which "flesh is heir." It disposes at one fell swoop with the vocation of the physician, degrading him at once to the level of a mere nurse. He is to interpose no obstacles to the course of disease, especially acute disease, for fear of imaginary perturbation and exhaustion. All specifics are to be laid on the shelf; *antidotal* remedies neglected as being of doubtful efficacy; and the more potent of *modifying* agents, as cold water, the extraction of blood local or general, veratrum, digitalis, opium, cathartics and emetics, are to be dispensed with as being not only useless but injurious. Drugs may be administered, but only in such quantities that they will not disturb the course of the disease; measures may be resorted to, but only to divert the attention of the patient. Such is the *Mild* plan of treatment proposed by Dr. Forbes as "*A Legacy*" to the young men of the profession, and advocated by O. Wendell Holmes and Jacob Bigelow, of Massachusetts. It is unnecessary to say anything further of these doctrines than that—

1. They are opposed to the experience of the profession—have been repeatedly acted on and as often abandoned as useless.

2. They are unphilosophical in theory, discarding the most important facts known to the profession, and rendering the basis of Medicine—the *Natural Sciences*—useless as a study.

3. They ignore the instinct of an individual when sick, for medicine, *for relief;* and attempt to appease his desires with deception.

4. They ignore the plainest axiom, the medical property of drugs; and in so doing render useless the provision that the Creator has made for the cure and relief of human suffering.

5. There is just as much sense in talking about "*mild*" truth, "*mild*" figures, "*mild*" virtue, as there is talking of "mild" remedies. A remedy is a remedy because of its quantity, quality, properties, &c., and has nothing to do with either "mildness" or "heroism."

POLYPHARMACIA (*Much Medicine*).

This term, which properly means "*much*" medicine, is also used to signify a prescription consisting of a great number of medicines. Those whose ambition it appears to be to find fault with what, to say the least of it, they know but little about, dwell with great emphasis upon the too frequent exhibition of drugs, and upon the excessive quantity used.

"There is no offense," says O. Wendell Holmes, "then, in expressing the opinion that after all which has been said, *the community is still over-dosed.* The best proof of it is that no families take so little medicine as those of doctors, except those of apothecaries, and that old practitioners are more sparing of active medicines than younger ones."

The above is a coarse random fling at the integrity of medical men. It would hardly be just not to concede to physicians, and especially old ones, more care in the prevention of disease, both as respects themselves and families, than could be expected to be exercised by laymen, or even young inexperienced practitioners. And as for physicians taking but little medicine themselves, the statement is gratuitous. They may not yield to the extraneous pressure often present for too much officiousness and variety, and this would be to their credit; but they take what science suggests, and are often impatient with hesitation and delay. We say here what we know to be true, having had some experience in medicating medical men and in being medicated by them. Indeed, it is fresh in the memory of many that a very distinguished foreigner, who had written learnedly on the inutility of blood-letting in any case, and especially in visceral inflammations, became himself, when afflicted with *pneumonia*, very desirous to part with a portion of the vital current. And who forgets the case of the celebrated Rush, who would have bled himself to death when laboring under continued fever, had not his medical advisers interposed?

XUM

If it were not egotism we would relate our own experience. In the only case of inflammatory disease from which we ever suffered (pneumonia), we ordered the physician, the moment that we were satisfied of the advent of the disease, to take blood from the arm until syncope was induced, which he did. We then, at our own suggestion, went under the influence of nauseating doses of tartar emetic, which was kept up for five or six days in succession. Local blood-letting and blisters were resorted to at the proper period; and finally, on the morning of the thirteenth day of the disease, after having taken the previous night some five or six doses of calomel and ipecacuanha combined, we felt the evidences of decided convalescence; it was rapid, and so complete that we lost no portion of the lung, nor have we ever had any evidence of the slightest adhesion.

Another phase of this subject is, that we have "*too many*" medicines. This is simply an argument against the resources of the profession. The more the better, the greater the variety to choose from. Nor is it an offset to say that old physicians use very few remedies; for seeing the indications to be met, they lay their hands at once upon the article to do it. It is not with Experience like with the neophytes, "try this, and try that," until something is found to answer the purpose. The nail is likely to be hit upon the head at once. Hippocrates, who founded scientific medicine, employed diet, baths, exercise, blood-letting (venesection, cupping, and scarification), the actual cautery, the knife, and a series of medicines of which thirty-six were mineral substances, one hundred and fifty animal, and three hundred vegetable. Since the time of this Father, 360 B. C., our instruments for combat with disease have been very much multiplied; and who now looks upon the volumes necessary to their description with anything but feelings of pride? Who, indeed, can have any other sensation when contemplating the humanity and industry that has worked out for suffering mortals such an amount of resource?

Connected with the subject before, there is a matter that needs reform. We allude to *loading prescriptions with a great number of ingredients.* For some time the clear-headed, careful practitioner has been engaged in abridging his prescriptions, and making them as simple as possible. "One thing at a time" is an adage very profitable to the therapeutist in controlling a case of disease

There are always a few leading indications that if properly attended to will give a favorable impulse to the case; besides, such practice leads to a better estimate of the character of remedies.

ABUSES OF MEDICINES.

If all of the criticisms and flings with which scientific medicine has of late been beset, had been confined to the above head, the results would have been much better for both the profession and the people. A profession that embraces as much of difficulty and of complexity, with reference to principles and ratiocination, as ours does, could not be expected to be inseparable from the grossest *abuse*. Abuses always as a consequence have existed, and they now exist. The former frequency of ptyalism, the indiscriminate use of the lancet, the exhibition unnecessarily of depressing wasting medicaments, or the polypharmacy of prescriptions, so much harped upon by the uninformed and thoughtless, are however not evidence against *proper use*, any more than the taking of too much bread into the stomach is evidence against the use of bread. This is the sophism that Dr. Forbes and his followers have perpetrated upon themselves and upon the people. They have confounded *use* and *abuse;* and as far as their influence has been felt, it has made a very unfavorable and unjust impression; and in all probability may be the means of more unnecessary suffering and mortality than the perturbative and exhaustive drugs that they have thought proper to caution the community against. While, therefore, every one, not demented, will use all of the means, and in quantities that will be most likely to accomplish results, there is no one but what will regard exposure of abuses of medicines as valuable contributions to the cause of rational medicine.

We have occasionally been astonished with medical men who chime in with this noisy meddlesome skepticism of the thoughtless. "The people have been drugged to death," "the community has been over-dosed," are the common expressions of the windy, while the more reserved say, "Well, there is no doubt but what we have given too much medicine." "Nature is entitled to more credit than we have generally given her." "Oh! what destruction and deformity we have occasioned with calomel!" "Dear mercy, just look at the method formerly of using drastic cathartics." "Well, well, well," says the old Æsculapian, of goose-quill notoriety, drawing up his legs and leaning back in his arm-chair, "I think,

to say the least of it, we had better all take in our horns a little." Such expressions, although perhaps not always so intended by those who indulge in them, are used as arguments against *all* medicines—against artificial interference of all kinds. When will those who wish to ventilate their opinions, and really have the welfare of the profession at heart, learn the import of the *ignorantia elenchi?*

Medical Evidence.

Self-delusion is no uncommon thing as every one would say who looks through the history of his race—the efforts of man to comprehend himself and the things with which he is surrounded. Each profession, in its turn, has been twitted with its "uncertainties" and laughed at because of its inefficiency. To the superficial there is no starting point, no *primum mobile*, and no kind of evidence but what is fallacious.

It is scarcely necessary to enter formally into an elaboration of this subject. We may state, however, for the benefit of the "younger brethren," that there are two species of *certainty* recognized—Metaphysical and Empyrical, or Experimental. The first admits of no exceptions, and has no degrees, as "*the whole of any thing is greater than a part;*" "*a straight line is the shortest distance between two points;*" "*every effect must have a cause.*" Such are positive. The second—Empyrical certainty—is synonymous with *Probability*, and admits of degrees. The most that we can say when a matter rests on it is, "*there is no known exception.*" The truths of Astronomy, and Natural science of all kinds, rest on this species of evidence. So also do those of Medicine. The facts, indeed, connected with the most exact and severe experiments of chemistry rise no higher in the scale of certainty than probability. The movements of the sun and the "atomic theory" are forcible examples of admitted truths resting on mere probabilities. Why then should the Medical profession be arraigned for want of positive certainty? Why should physicians, even those who rise intellectually entirely above the ordinary bother of complex details, be expected to foretell all about the action of medicines, and the result of cases? That they should make blunders daily is no ground for wonder—the wonder really is that they don't make more.

We are told by *O. Wendell Holmes* of the mistakes made by medical men in reasoning on the effects of their prescriptions and one, especially, is posted up for public inspection. The "*post hoc*

ergo propter hoc error—he got well after taking my medicine, therefore in consequence of taking it."

That medical men, or men engaged in any of the pursuits of life are unable to boast of exemption from such a bewitching fallacy, one so easily committed, is not at all strange. But it is a little remarkable that O. Wendell Holmes, himself, in reading to the medical profession of Massachusetts a homily on reasoning, should have committed a similar sin before leaving the Temple. He remarks:

"One practical hint may not be out of place here. It seems to be sometimes forgotten, by those who must know the fact, that the *tongue* is very different anatomically and physiologically from the stomach. Its condition does not in the least imply that of the stomach which is a very different structure, covered with a different kind of epithelium, and furnished with entirely different secretions. A silversmith will, for a dollar, make *a small hoe* of solid silver, which will last for centuries and will give a patient more comfort used for the removal of the accumulated epithelium and fungous growths which constitute the fur, than many a prescription with a split-footed ℞ before it addressed to the parts out of reach. * * * I think more of this little implement because I consider that the *use* of it, or something like it, saved the colony at Plymouth in the year 1623."

That the reader may understand this historic allusion, we will state that in 1623, at Plymouth, Massassoit was taken sick; prostration, stupor, epistaxis, and frightful sordes were present. Edward Winslow went to see the patient and gave him some conserve, washed his mouth, and *scraped his tongue*, and he recovered, and saved, it is said, the infant colony.

Saying nothing about the ignoring of the tongue as an element of diagnosis, and the coarse, uncandid allusion to the prescriptions of the physician which the above extract contains, we come at once to the "*silver hoe.*" This was used to scrape the tongue with in a case, that Dr. Holmes regarded as *Typhoid fever.* The patient recovered, and Dr. Holmes thinks the recovery due to the silver *hoe*, "that only costs a dollar, and will last for centuries." The hoe was used, the patient recovered. Is this, or is it not, the *post hoc ergo propter hoc* argument? The patient got well after his tongue was scraped; therefore in consequence, Dr. Holmes thinks, of scraping it.

Besides now the commission of the "*post hoc ergo propter hoc*" error by the Poet, we find something more here:

1. A *new* remedy introduced for typhoid fever, "*the silver hoe*" remedy.

2. And this too, from its alleged efficacy in a single case—not a case either that the Poet himself witnessed and watched throughout its entire course, but one that he heard of, as having occurred more than 200 years ago under the observation alone of laymen. Formerly some 10,000 or 12,000 successful trials of a medicine were necessary, before conceding to it curative properties!

3. The remedy don't cost much, "only a dollar."

4. "It will last for centuries."

5. "Any silver-smith can make it."

6. Its prestige is fine. "It saved the infant Colony at Plymouth from a mortal disease"—a very valuable feat truly, if we take into consideration all of the consequences of not being saved.

For the benefit now of all such innovators and self-conceited reformers as O. Wendell Holmes, Jacob Bigelow, Sir John Forbes, *et id omne genus*, men whose influence, because of position in the regular profession, has been more injuriously felt than otherwise would have been, we subjoin the following resūmé of philosophical *Theories* which we have prepared with some labor. These theories begin with Thales, the Father of Greek Speculation, who lived B. C., 636, and extend to Aristotle, the Father of Natural Science, who lived B. C., 384, and embrace a period of less than 300 years. The discussions relate especially, it will be observed, to the generalities—Heat, Motion, Life, Death, the Universe and Disease, and, as a consequence, embrace, among other things, many, if not every single one of the dogmatisms which have served as the foundation of the pleas for radical reform in medicine.

We ask, then, the above named gentlemen to take a look into these theories, and then to buy a looking-glass and look at themselves.

Doctrines of Ancient Philosophers.

THALES (B. C., 636)

inquiried into the constitution of the Universe—taught that the principle of all things is Water.

ANAXIMENOS

taught Air as the beginning and principle of all things.

DIOGENES

called the Air a Soul, and then regarded it as the principle of all things.

PYTHAGORAS,

can't tell when born—one of the founders of Mathematics—regarded as of superhuman power—was supposed to have got his learning from Egypt—invented the word Philosopher—originated a *Secret Society*—lived only for the sake of Wisdom—was in favor of Aristocracies—his system of Philosophy *not* known—regarded abstractions as the only materials of Science—his great principle was "Numbers are the principles of all things"—regarded numbers as *entities*, not *symbols*—maintained the Soul and Intelligence to be a certain combination of numbers.

XENOPHANES

was a *Rhapsodist*—his Poetry was elegiac, gnomic—looked at the *dark side* of things—taught that truth and science are for all men—Philosophy was, "God is *a sphere*"—taught Monotheism—his monotheism was Pantheism.

PARMENIDES

taught the difference between the ideas obtained through *Sense* and those obtained through *Reason*—anticipated the celebrated doctrine of "*Innate Ideas*"—maintained the existence of two "*Causes*"—the one to satisfy sense, the other to satisfy reason—taught that thought is dependent on organization—the strongest physique, the strongest thinker—taught the Finity of the Creator—the uncertainty of all knowledge

ZENO OF ELEA

appreciated the superiority of Intellectual pleasures—preferred the recompense of conscience to worldly rank—invented the Logic celebrated as *Dialectics*, a refutation of error by the "*Reductio ad absurdum*," successfully afterwards used by Socrates and Plato—dealt in prose writing—held the same doctrines as Parmenides—taught that there was no such thing as Motion. The *Dialectic Method* created the "sophists" and "sceptics."

HERACLITUS

taught "Life to be a *comedy* to those who think; a *tragedy* to those who feel"—was called the "*crying*" Philosopher—retired to the

mountains and lived on herbs and roots—aim of his life, to explore the depths of one's own Nature—taught the uncertainty of *sensual* impressions and the certainty of "Reasoning"—maintained the senses as a source of knowledge, ill-educated sense gives error, the rightly-educated sense, truth—suggested that the principle of all things is *Fire*—taught the vitality of Nature and mutability of earthly things.

ANAXAGORAS

was the master of *Pericles, Euripides* and *Socrates*—was banished because he attacked the religion of his day—taught that the Senses can be depended upon for phenomena (appearances) but not for Noumena, the "substratum" "or substance"—"Intelligence to be of all things the purest and subtlest, and has entire knowledge of all"—taught Intelligence as the God of all things, his Intelligence the "*arche*"—admitted both "*Sense*" and "*Reason*"—had a principle, "*Homœomeriæ*," by which he represented Infinite Matter—not changed by combination.

EMPEDOCLES

was wealthy, and cared not for worldly honors—possessed great control over the people of his time—was ostentatious in dress—was an Electic, or a believer in the superiority of Reason—taught *metempsycosis*—abstained from animal food—regarded *Earth, Air, Fire* and *Water*, as the primary elements—taught that *Love* was the "creative" power, *Hate* the "destructive" power—taught that God was a sphere in the bosom of Harmony fixed, in calm rest, gladly rejoicing.

DEMOCRITES

was called the "*laughing*" Philosopher, the antithesis to Heraclitus, "*crying*" Philosopher—was wealthy, entertained Xerxes—was the greatest traveler among the ancients—declined political power—led a quiet, sober life—taught that "*Sensation*" and "*Reflection*" constitute all knowledge—asked the question: "How do we perceive external things?"—supposed that all things were constantly throwing off images of themselves, which enter the soul by the pores of the sensitive organs, the *images* being imperfect our knowledge is necessarily imperfect—perfected the theory of Anaxagoras in regard to "Atomic Combinations," thus anticipating Dalton.

THE SOPHISTS,

a calumniated race—misrepresented by Plato—have been misnamed—were professors of Rhetoric—sophist signified at first a "*wise man*," "to make the worse appear the better was their grand aim"—demanded enormous *sums* for their "*Art*." Athenians would not have tolerated a system that at once destroyed all truth and morality—Architects, Sculptures, Poets and Philosophers, as Athenians were, would have ignored it—were wealthy, and the intellectual leaders of their age—had no doctrine in common—taught the art of disputation—were fond of law-suits—Corax and Tisias wrote on the art of disputation, Protagorus on the most remarkable points of Law, and Gorgias composed a set accusation and apology for every case that could present itself—in Athens every citizen his own Lawyer—Greeks did not regard the teachings of the Sophists as corrupt.

PROTAGORUS

could not believe in the *Atomic* theory or in *Reflection*—supposed thought and sensation the same, that all knowledge therefore was phenomenal—Man the measure of all things—what man perceives exists, what he does not perceive *does not* exist—convinced of the uncertainty of all knowledge, the wise man is the physician of the soul—*Right* and *Wrong*, among men, is not from *Nature* but from *Convention*—for man there was no eternal right, because there was no eternal truth—protested against metaphysics.

SOCRATES.

The sophists had slighted Truth—Socrates made her a mistress. Sophists professed to teach everything—Socrates knew that he knew nothing. Socrates accouched others of their ideas, and then decided upon them as regarded whether they were fit to live—was renowned for his wisdom—his avocation was to expose error—rude and ungainly in his manners—went barefooted through the streets of Athens, absorbed in thought—in market places disputed with all who were willing—corporeal appearance very poor—nose flat, upturned nostrils, thick lips, squab figure, big belly—his father was a sculptor, so was Socrates—did not try to account for the existence of the universe, but tried to find his path through it—had a trouble with his wife—said he married her, being convinced that if he could endure her, he should be able to endure all others—served in three military campaigns, distinguished himself in all.

XUM

Plato said that Socrates ought to have had the prizes awarded to himself—proclaimed the supremacy of *Virtue* and *Justice*—braved tyrants and mobs—was once a Senator, the only office he ever held—always said that he knew nothing—to any one who professed knowledge, he stepped up and asked to be instructed—soon made a web that entangled his instructor—wrote no books—did not lecture—taught only by conversation in public places—taught that only the wise could govern—if unwilling to trust yourself in a ship without an experienced mariner, why trust the State to an inexperienced ruler?—was charged with impiety and executed, because he opposed Mythological interpretations—was tried and condemned politically—Plato, then a young man, present at his trial—welcomed death as a new birth to a higher state of existence—on the last day of his life held a conversation on the "*Immortality* of the *Soul*,"—was author really of the Inductive method of Reasoning—proceeded from propositions the best known, to those the least known—was among the first who attempted a classification of things—invented *Genus* and *Species*, which originally meant "*family*" and "*form*,"—*applied the same method* to the investigation of Man and Society, that Bacon did to Physics—taught men that all their knowledge was a sham—made the common mistake of mistaking the definitions of things for the things themselves—called by Plato and Aristotle master—proposed "the *nature* and *condition* of things" as the grand question of philosophy—his philosophy taught, "*Know Thyself*,"—regarded virtue and knowledge as *identical*—believed in an inward "*Monitor*," a Demon, as he called it—was regarded as the grandest figure in the world's *pantheon*—the bravest, simplest, truest, and wisest of mankind. See dialogue with Aristodemus and Enthydemus.

EUCLID

was a Eleatic, and joined to this the Morality inculcated by Socrates—maintained that there was one unalterable *Being*, to be known by Reason only—regarded Him as the source of all goodness—plan of reasoning was to attack *conclusions*, not *premises*.

ARISTIPPUS (*the Pleasure Philosopher*),

was fond of luxury, but avoided excess—"A fellow of infinite mirth,"—was the precursor of Epicureanism—shared the opinions of the sophists with respect to the uncertainty of *science*, but was no sophist—was good at *repartees* and *puns*. Socrates taught that

Happiness was the desire of all men, and that this was obtained by the regulation of the Senses and Desires. Aristippus did not differ with Socrates about the aim, Happiness, but said that happiness meant "*pleasure.*" "*Pleasure*" he regarded as the only positive test of what was good. With the sophists he regarded *pleasure* and *pain* as the criteria of actions—no action being, in itself, either good or bad, but only such according to convention.

ANTISTHENES (*the Cynic*),

renounced his own philosophy and came to Socrates to learn wisdom—said "I would rather be mad than sensual,"—advantages of philosophy, he said, enabled him to keep company *with himself*—being told that he was praised by some, he asked, "*Have I done anything* WRONG, that I should be praised?"

DIOGENES (*Prince of Cynics*),

subjugated all sensual desires—ignored the wants of the body—carried on a war of the Mind against the body—tried to live on raw meat and unboiled vegetables, and failed—wore as dress nothing but a cloak—performed private acts in public, decency of every kind he studiously avoided—had a philosophical Reason for annoying people with indecent gestures—lived in a *Tub*—to the polished elegance of Athenian manners the cynics opposed the coarsest vulgarity—despised all kinds of enjoyment—took a pride in simplicity and poverty, because *luxury* and *wealth* were fashionable—went to a party at Plato's house unbidden, and said, "thus I trample on the pride of Plato,"—was ostentatiously poor—in correcting the effeminacies of the age, outraged all its decencies—meeting with Alexander the Great, Diogenes was asked by his excellency what he could do for him. Diogenes replied, "stand from between me and the sun." Alexander remarked, "were I not Alexander, I would be Diogenes." On a certain occasion went in daytime about the streets with a lamp, and on being asked what he was in search of, he answered "*A Man*"—opposed the sophists with facts—when sophist on a certain occasion was arguing against the *possibility* of Motion, Diogenes got up and walked. Instead of speculating about virtue, cynics endeavored to be *virtuous.*

PLATO

was loved for his views of *Love;* religious love him for his doctrine on the *Immortality* of the soul; literary critic for his

clearness on metaphysics and his eloquence—was not an "*Idealist*" —was a "*Dialectician*"—his Morals and Politics were the *ne plus ultra* of logical severity—Plato the man, completely absorbed in Plato the Dialectician—looked upon human passion as a disease, and human pleasure as frivolity—style of writing "a middle species of diction between verse and prose." (Aristotle.) Style difficult and tedious—ideas good but not easily acquired—was born during the most active and brilliant period of Grecian thought and action —many fables respecting him—education good—skilled in the Pythean games—attached importance to Gymnastics as doing for the body what Dialectics do for the mind—cultivated Poetry, Music, and Rhetoric—visited Egypt for information—taught his disciples gratuitously—visited Sicily, affronted *Dyonisius* there, who had him sold as a slave—his purchaser Anneceris set him free and he returned to Athens—Lecturing and writings his chief occupations—was melancholy—smiled sometimes, but never laughed—had many admirers, but no friends—composition of his Dialogues the only solace of his declining years—did not like Poetry—looked upon Poets as inspired madmen, unconscious of what falls from their lips—was a great but not an amiable man—his works great but only suited to an impossible state of society—his ethics the ethics of a Logician and not those of a man who understands human nature and sympathizes with the complexities of life—wrote pretty much in the form of dialogue, three classes, elementary, progressive, constructive—has been accused of having two sets of opinions, "esoteric." "exoteric"—his doctrines, as quoted by moderns, incongruous, owing to misconception in part, and in part to circumstance, that he changed many of his early opinions—had no Method really—inherited all the knowledge of his age—seized upon the Socratic Method, and enlarged it—also adopted the leading features of the Pythagoreans and the Eleatics—was the culminating point of Greek philosophy—services rendered to Philosophy by Socrates and Plato related more to the *method* of seeking truth *than* to truth itself—taught the important point that to know a thing, you must also know "*what it is not*"—taught the important processes, Analysis, Synthesis, Generalization, Classification—taught Dialectics, the art of *Thinking*, of *Discussing*—looked on the Soul of man as being in a state in this world which keeps longing to be released from its earthly prison—and that it is all the time striving to get glimpses of that eternal truth where it would

some day rest—regarded truth as foot marks on the perilous journey and guides into the wished-for goal—regarded *Time* as nothing more than the wavering image of Eternity—was a Realist, Realists believed all abstract ideas, as Sin, Virtue, etc., have a real existence—declared his inability to explain the real nature of the soul, tried to paint a picture of it—compared it (the soul) to a chariot, with a pair of winged horses and driver—thought the Gods have the largest souls—thought when a soul reached its highest degree of perfection, it attained to the height of the *Realities*, the things of Eternal existences, and was out of the way of all harm—but if weighed down by vice, soul entered another body, this living virtuously and improving, soul at next migration entered a better body; if it *degenerated*, entered next time an inferior body, until at last occupied the body of a *brute*—required *ten thousand years* for the soul to reach its pristine state—human bodies, after having been adjudged bad, received their sentence for punishment under the Earth, or were elevated to places in Heaven if their deeds had been good—basis of the Platonic Philosophy, *Dialectics*, (Logic)—the subject matter of his Dialectics, Ideas—method of *Definition*, *Analysis* and *Induction*—God the bottom of all Ideas, just in the same way that Ideas are at the bottom of all Phenomena—God the one Being comprising within himself all other beings—God arranged Chaos into Beauty—nothing Beautiful but *Intelligence*, and as there is no Intelligence without a Soul, placed the soul in the Body of the world and made the world a great Animal. (Here commenced Pantheism). Plato's ethics were the result of Logical conclusions rather than of Ethics proper, or a study of *Human Nature*—Goodness and Truth convertible terms, and virtue the same as science—*Knowledge* alone does not constitute happiness; nor can virtue be taught—set the Passions aside as disturbances of the moral economy, as the cause of moral disease—endeavored to apply his Ethics to the Politics of the State—taught that he who does an injury suffers more than he who endures it—his views of a Republic entertained by many of the best thinkers of the present day—weakness of man is the cause why States are formed—society should be an image of man himself—union of intellects should form but one *Intelligence*—man's virtues, Wisdom, Fortitude, Temperance, and Justice—first duty of Rulers to instil into the minds of the citizens just notions respecting God—those who attributed to the Deity the passions and imperfections of

men should be banished, hence the Poets were banished from the government—Poets enervate the Soul by pictures of *immoderate desires;* they give imitations of vices and follies of men—equality of mind his ideal of human happiness—Poetry and Music interferes with this equality, and so does conjugal love—as however the State needs children, they must be begotten—taught that Parents are foolishly fond, so are Husbands—that violent women are to have mild men and violent men mild women—ordained a Community of wives—women should share with men the toils of War and Agriculture—as some few women manifest a capacity for Philosophy these should share in government—(*Woman's Rights!*)—taught property, as the great disturber of social life; property should, therefore, be abolished—the State alone should have riches. (Communityism!)

ARISTOTLE

born at Stagira, in Macedonia, a port of Greece—was rich in money—his father, Nichomachus, a physician, who wrote several works on medicine and natural history—his first instructor Proxenus—a pupil of Plato for 17 years—Plato regarded him as the "*mind* of his School"—did not agree with Plato in all he taught, but did not quarrel—read up all the literature of his predecessors—became the instructor of Alexander, the Great—Alexander and Philip both contributed freely to the expenses incident to gathering the materials for the "*History of Animals,*" (two hundred thousand pounds sterling)—thousands of men placed at his disposal for the collection of specimens in zoology—made many discoveries, and many of his observations valid at the present time—opened a school in Athens, at the Lyceum—students more numerous than at Plato's—lectured while walking, and hence his disciples called Peripatetics—his lectures of two kinds, "*scientific* and *popular*"—former for more advanced students—wrote a great number of works, only one-fourth of which extant—his works exercised a great influence over European culture—were translated into Syriac and into the Arabic languages—*Logical* works translated into Latin, and furnished the Philosophy of the *schoolmen*—his influence extended over 20 centuries, and recognised in England, Bagdad, Cordovia, Egypt, and every European nation. *Method* of Socrates, one of Investigation—that of Plato, of Analysis and Classification—Aristotle's, one of *Demonstration*—Plato, Ideal-

ist and Rationalist—Aristotle, an Empyric and Materialist—taught observation as the proper *Method* of investigation and *Experiment*, the *instrument*—insisted upon *Observation* and *Generalization* of facts as alone capable of furnishing correct ideas—differed from Bacon in supposing that he could comprehend the Causes, Essences, etc.—use of the word Dialectics differs from Plato's—Plato's the Science of *Being*, Aristotle's the Instrument of Thought—Logic prized, more than any of his works, by posterity, still lives—taught that every thing that we think about may be reduced to a Proposition—thoughts are a series of Propositions, to understand the whole nature of Propositions is the province of Logic—taught Logic as the organon of science—had ten Categories: Substance, Quantity, Quality, Relation, Action, Passion, The Where, The When, Position in Space, Possession—under these every thing may be classed—taught the principle of Contradiction to be the deepest of all; for on it all Demonstration is founded—taught that to *be* and *not to* be, is impossible.

We might append here a synopsis of the doctrines of the philosophers of more modern times; but it will be found, by those who have the curiosity to look into, for instance, Bacon, Descartes, Spinosa, Locke, Leibnitz, Berkeley, Darwin, Kant, that they scarcely raise a question not previously thread-bare with the Greeks. The Induction and Classification, insisted on by Bacon, as an example, had not only been foreshadowed by Socrates, but were absolutely taught by both Plato and Aristotle. The labors, indeed, of all of these truly great philosophers have been mostly on Method; and in this line their contributions are invaluable, especially those of the first two.

We invite, in conclusion, our friends, the "Reformers," to read and ponder over the above chapter, and then ask themselves whether they ever had an idea or a thought on any of the "*immaterials*," that had not its archetype in speculations more than twenty centuries old.

XUM

Notes on some of the Chemical Reactions of Nicotine and Daturine.

By T. G. WORMLEY, M.D.

The nicotine used in the following experiments had a slight amber color, and a peculiar acrid odor. The fractions refer to the fractional part of a grain of pure nicotine, in one grain of water.

1. BICHLORIDE OF PLATINUM.

1. $\frac{1}{100}$th, grain of nicotine in one grain of water, gives with this reagent, an immediate yellow cloudiness, which increases and gives in a little time a rather abundant deposit of orange-yellow crystals, and yellow amorphous matter. The precipitate is insoluble in acetic acid. The amorphous part of the deposit dissolves rather readily in a few drops of hydrochloric acid, but the crystals require some time and stirring before they disappear. If upon the addition of the reagent, the solution be stirred with a glass rod, it will give immediate rings of crystals, and the precipitate will be more copious than without the stirring. The form of crystallization is totally different from that produced by the reagent with ammonia.

The same amount of nicotine in the form of chloride, gives with the reagent an immediate precipitate, which is entirely crystalline.

2. $\frac{1}{500}$th, it is some time before a slight cloudiness appears, but if the solution be rubbed, very soon granular rings appear, and in a little time there is a quite satisfactory deposit.

2. TERCHLORIDE OF GOLD.

1. $\frac{1}{100}$th, gives an immediate copious canary-yellow amorphous precipitate; not entirely soluble in several drops of acetic acid. If several drops of the solution be precipitated by the reagent, and the mixture be then heated, the precipitate dissolves and gives a purple solution.

2. $\frac{1}{1000}$th, a good yellow amorphous precipitate, which slowly dissolves in a few drops of strong potash solution. If the precipitate from several grains of the solution be heated, it dissolves, and is reprecipitated unchanged upon cooling.

3. $\frac{1}{5000}$th, immediately begins to give a greenish-yellow, which very soon becomes a rather copious dull yellow precipitate, readily soluble in a drop of potash solution.

4. $\frac{1}{10000}$th, a rather good greenish-yellow precipitate.

5. $\frac{1}{20000}$th, in a few moments a bluish-yellow, which in a little time becomes a rather good greenish-yellow deposit.

6. $\frac{1}{4000}$th, in a very little time a cloudiness is perceptible, and soon there is a quite distinct deposit.

7. $\frac{1}{8000}$th, after some little time there is a quite satisfactory cloudiness.

With the chloride of nicotine the reagent seemed to not give quite as good reactions as above stated.

3. Chloride of Mercury.

1. $\frac{1}{100}$th, gives an immediate copious white flocculent precipitate, which changes to canary-yellow, and in a little time becomes partly crystalline.

2. $\frac{1}{300}$th, a copious dirty white precipitate, readily soluble in acetic acid.

3. $\frac{1}{1000}$th, a cloudiness begins in a few seconds, and after a little time there is a quite good bluish flocculent precipitate.

4. $\frac{1}{2500}$th, after some minutes there is a slight cloudiness.

4. Nitrate of Suboxide of Mercury.

1. $\frac{1}{100}$th, an immediate dirty brown amorphous precipitate.

2. $\frac{1}{1000}$th, a yellow-white precipitate.

3. $\frac{1}{3000}$th, a rather good dirty white precipitate.

The soluble salts of lead, copper, nickel, cobalt, and several other metals, will give precipitates with rather strong solutions of nicotine.

5. Iodine in Iodide of Potassium.

1. $\frac{1}{100}$th, gives a copious red-brown amorphous precipitate, which will soon dissolve if there is not excess of reagent. The precipitate is readily soluble, with a clear solution, in a few drops of solution of potash.

2. $\frac{1}{1000}$th, a copious red-brown precipitate.

3. $\frac{1}{10000}$th, a good red-yellow precipitate.

4. $\frac{1}{20000}$th, a greenish-yellow precipitate.

5. $\frac{1}{60000}$th, gives a quite good greenish deposit.

6. $\frac{1}{100000}$th, gives a very obvious precipitate.

7. $\frac{1}{300000}$th, gives a perceptible cloudiness.

6. Bromine in Bromohydric Acid.

1. $\frac{1}{100}$th, gives a copious yellow precipitate, which in a little time dissolves, and is reprecipitated upon the farther addition of reagent.

2. $\frac{1}{10000}$th, much like 1.

3. $\frac{1}{30000}$th, gives a very good greenish precipitate, which soon dissolves, and is not reprecipitated upon addition of reagent.

4. $\frac{1}{100000}$th, a slight cloudiness which soon dissolves.

7. Carbazotic Acid.

1. $\frac{1}{10000}$th, an immediate copious green-yellow amorphous precipitate, which will soon dissolve if there is not excess of reagent. In a little time the precipitate becomes crystalline.

2. $\frac{1}{30000}$th, a copious green-yellow precipitate, which is very soon a mass of crystals.

3. $\frac{1}{100000}$th, a rather copious greenish precipitate, which soon crystallizes.

4. $\frac{1}{100000}$th, gives a very good green crystalline precipitate.

5. $\frac{1}{200000}$th, the precipitate is just perceptible.

The chloride of nicotine gives the same reactions as those above stated. The reagent was dissolved in alcohol.

8. Tannic Acid.

1. $\frac{1}{10000}$th, gives a copious white amorphous precipitate.

2. $\frac{1}{100000}$th, a good bluish white precipitate.

3. $\frac{1}{100000}$th, gives a slight cloudiness.

With a solution, holding $\frac{1}{100000}$th of its weight of nicotine, neither of the following reagents will give a precipitate: the chromates of potash, ferro, nor ferricyanide of potassium, sulphocyanide of potassium, nor gallic acid.

For the purpose of extracting nicotine from its solution in water, it has been usual to recommend agitation of the solution with *ether*. From some experiments made upon this point, it would seem that nicotine is not readily removed from its water solution by ether, for 1. One grain of nicotine in 100 grains of water, was agitated with several times its volume of ether, without very obviously diminishing the strength of the water solution; the operation was repeated until about thirty volumes of ether were used; the water solution still gave with the various reagents much better reactions than was obtained from a $\frac{1}{30000}$th solution of pure nicotine. 2. 100 grains of a $\frac{1}{100000}$th solution of nicotine was agitated at different times, with several times its volume of ether; when twenty-five volumes of ether had been used, the water solution gave with chloride of gold and carbazotic acid, more copious precipitates than a $\frac{1}{250000}$th solution of nicotine.

Experiments made with the chloride of nicotine, by decomposing by potash, and extracting by the usual method, gave about the same results as stated above.

One volume of a $\frac{1}{1000}$th solution of nicotine was agitated for some minutes with five volumes of *chloroform*. After separating the liquids, the water solution gave with chloride of gold and carbazotic acid, about the same reactions as a $\frac{1}{4000}$th solution of nicotine. The chloroform evaporated in a water bath, and the drop of oil-like fluid left, dissolved in water, showed, when treated by the various reagents, that very nearly all of the nicotine had been taken up by the chloroform.

DATURINE.

In the May number of this Journal, some of the chemical reactions of *atropine* were given. The atropine used for the experiments was obtained from Luhme. Since then a specimen of *daturine*, obtained from E. Merck, of Darmstadt, has been examined; it was crystalline, in beautiful brilliant needles. When submitted to the various reagents already given for atropine, the daturine gave precisely the same results; the same reagents producing the same kind of precipitates, which behaved in all respects the same as those obtainad from atropine. The limits of the various tests were also the same. Bromine in bromohydric acid gave the same kind of crystalline precipitate. A $\frac{1}{100}$th solution treated with potash, gave an immediate amorphous precipitate, which soon changed to crystalline needles; in this the daturine differed from the atropine, as there was a failure to obtain crystals from the latter substance, when acted upon by potash solution; this difference, however, may have been due to difference of purity of the alkaloids. The two substances were also submitted to a variety of comparative reactions, not stated in the article upon atropine, and in no respect were they found to differ. They appeared in fact to be identically the same.

These results accord with the investigations of Dr. A. von Planta,* in which he assigned to the two alkaloids the same ultimate composition, $C_{34}\ H_{23}\ N\ O_6$, and the same chemical properties.

1. *Extraction by Chloroform.*—One grain of daturine dissolved rather readily in 400 parts of water at the ordinary temperature; this solution was then agitated for some time with *four volumes* of

* Chem. Gaz., vol. viii, p. 349.

chloroform; after separating the fluids, the chloroform was evaporated on a water bath to dryness; it left a gum-like tenacious residue, which weighed ,85 of a grain. This residue when dissolved in water, and then treated by the various reagents, proved to be pure daturine, not having undergone any decomposition in the transfer.

2. *Extraction by Ether.*—One grain of daturine, treated as above, and agitated with *four volumes* of *ether*, and the ether evaporated to dryness, left ,80 of a grain of the same kind of residue of pure daturine as furnished from the chloroform. In this case the daturine distributed itself equally through the five volumes of fluid.

COLUMBUS, O., Aug. 25, 1860.

A New Operation for Procidentia Uteri, with a Successful Case.

By JOHN O. BRONSON, M.D., Prof. of Surgery in the New York Preparatory School of Medicine, &c., &c.

On Tuesday, the 21st of February, 1860, I was consulted by Mrs. B——, of Brooklyn, N. Y., for procidentia uteri of the most severe character, with which she had been suffering for six years. She was twenty-six years of age, had been married eight years, and was the mother of one child, six years old.

It was ascertained that she was in labor but about nine hours when giving birth to her child, and did not get up unusually early. She did well for about three weeks or a month, when her womb prolapsed, and at the end of two months protruded beyond the vulva. In a short time it assumed a large size, and by each monthly flux increased until it became of such magnitude as to prevent replacement by herself.

By constant exposure to the air and to contact with her clothing, ulceration was produced. This added to the hypertrophy of the organ, and of course increased the procidentia.

The length of time this condition of things had existed began to affect the constitution of the patient, and from the pain produced by motion she became almost helpless. Her forlorn condition forced her to seek advice, and having heard of the success which followed my operations in such cases, she came to me for relief.

Receiving my opinion, she desired an operation, which was fixed

to be performed on the following week. Having taken board in town, on Monday, the 27th day of February, five days after the above mentioned consultation, treatment was commenced by replacing the prolapsed organ, and directing the patient to maintain the recumbent position. Before replacing, however, the following particulars were gained:

The cervix measured two and three-quarter inches in diameter, greatly indurated and ulcerated. Os tincæ not very patulous. The internal measurement of the uterus was four and three-quarter inches. The body as well as the cervix was indurated and hypertrophied. The sacrum was rather straight. The perineum was perfect.

On the following Wednesday, the patient, having passed over or become accustomed to the symptoms produced by the replacement of the organ for so long a time prolapsed, and her bowels having been freely emptied, was deemed in condition fit for the operation.

Anesthesia having been produced by chloroform, the patient was placed supine, with her lower extremities flexed upon themselves and upon the pelvis, as if for the application of the forceps. Upon inspection of the parts, I found the vagina so very capacious that I gave up the idea of operating in my usual method, of removing a portion of the mucous membrane from the posterior wall, and the use of the instrumental suture I designed for such cases, and concluded to operate on the principle that the vagina being inverted in cases of procidentia, it could not be, if closed longitudinally through the median line for a short distance, however large it might be. So removing the mucous membrane from the vaginal wall on both sides for the space of five-eighths of an inch wide and two inches long, I applied four iron wire interrupted sutures to the denuded surfaces, as if they were the two sides of a simple incised wound, the lower border being the bottom of the wound, introducing the sutures at points three-eighths or half an inch from the superior border of the vivified surfaces, passing them out below at the margin of the denuded surface, to enter and appear at corresponding points in the opposite side.

The parts were brought into close and perfect apposition, and the sutures were twisted so as to maintain the coaptation, and left to remain until such time as was deemed expedient to remove them. Perfect union had taken place on the fourth day, but I thought it prudent to leave the sutures, lest by distending the parts the adhe-

XUM

sions might give way. On the eleventh day after the operation the sutures were removed. Union of the two surfaces was complete, save at the upper end, where the highest or upper suture had produced ulceration and cut its way out.

The uterus had considerably diminished in size, but more in weight. The recumbent posture was advised for a little longer time—the parts to be frequently bathed, and an occasional application of iodine to the cervix uteri to be made.

On the 26th of March, just four weeks from the time of replacement of the organ, and the same time, less two days, from the operation, the patient was allowed to depart to her home, the uterus being maintained in its position by means of a small water-pessory. It was not thought prudent to allow the patient on her feet without such support, as long as the uterus was possessed of any hypertrophy or abnormal weight.

At the present time the patient is attending to her household duties, suffering from no symptoms betokening a return of the previous condition.

The operation was performed in the presence of and with the assistance of Drs. E. Blackwell, S. L. Cushing, D. A. Hughes, and F. Prentice.

American and Foreign Intelligence.

Lectures on Experimental Pathology and Operative Physiology, delivered at the College of France, during the Winter Session 1859–60, by M. CLAUDE BERNARD, Member of the French Institute; Professor of General Physiology at the Academy of Sciences.

GENTLEMEN:—We shall continue to-day the comparative study of the diseases which arise in man, and those which affect the lower animals; and in this lecture we shall bring to a close this important subject.

The nervous system, as we have sufficiently proved, is the agent through which the vital powers almost invariably exert their influence; but the nerves themselves, in the manifestation of this activity, are inseparably connected with muscular tissue: motion is, in fact, the only symptom which reveals the presence of nervous

power. We, therefore, invariably discover, in all the phenomena which belong to this class, three distinct stations—a centre from which the impulsion starts, nerves which transmit, and muscles which obey it.

Our last lecture was entirely devoted to the study of certain affections in which nervous influence does not appear to interfere—we allude to septic, virulent, and contagious diseases; but even in such cases, the nervous system almost inevitably plays a part in the production of the internal disorder, which results from the introduction of similar poisons into the economy. Let us adduce an instance of this. We shall select an example from the phenomena of embryology. The evolution of the ovum takes place according to well known rules, which have been established by direct observation; all its successive stages have been attentively watched in various animals, and it has been discovered that vessels and nerves which at the outset do not exist, make their first appearance at a given moment. Now, if certain poisons are introduced into the ovum during the first period of its development, the process of evolution is not interfered with, provided that heat, moisture, and the other external conditions, remain precisely the same as before. But, as soon as vessels and nerves have been formed, the ovum is immediately poisoned, and its vital activity at once extinguished. Here, then, we find certain phenomena connected with development, which appear in some measure to depend on nervous influence; but it must be acknowledged, that in the greater number of cases the reverse takes place, and that the powers which preside over the historical evolution of tissue are totally distinct from all other biological motors, and enjoy complete independence in their action. We are, therefore, compelled to admit the existence of three principal classes of phenomena within the living body, which, although closely connected through reciprocal influence, exist independently of each other.

Firstly—Nervous phenomena, embracing all the mechanical actions of life;

Secondly—Catalytical phenomena, embracing the various kinds of fermentation;

Thirdly—Histological phenomena, embracing the entire results of cellular evolution, or the process of development.

The two first classes of physiological agents, viewed in connection with the origin of disease, have been examined in our previous lectures; it now remains for us to investigate the latter—viz: the morbid phenomena superinduced by disordered powers of evolution.

It can not be denied that during the first period of embryonic life, the development of tissue is in no way connected with nervous influence. The nerves have not yet been called into existence, and are only created at a later period, through the agency of that mysterious force which presides over the evolutions of the being so lately called into life. The vascular system being for similar motives, set aside, we discover, in the very first stage of existence,

nothing but the primitive cell, and the medium in which it grows to maturity. But micographists do not entirely agree in the view they adopt of the first step which commences that long series of successive evolutions, by which an entirely new living being is ultimately produced. That within an entirely amorphous medium, a living cell might spontaneously be produced, was the opinion of Schwann; but, in our own days, these views appear to have been completely laid aside; modern investigators are convinced that all living organizations are invariably derived from one primitive cell, which, by its divisions, and subdivisions, gives birth to all the rest; now, this primordial element originates, of course, with the animal's parents.

We met, however, with cases in which it seems altogether impossible to deny that one or several primitive cells have been spontaneously generated within a medium which previously contained no vestige whatever of histological elements. The serum of blood, for instance, when introduced into a vessel hermetically closed, is found to contain, after a few days have elapsed, a large number of yeast-cells, which the grape-sugar dissolved in this liquid has probably produced; and yet, when carefully examined under the microscope, immediately after coagulation had taken place, it did not contain a single nucleus or cell. Similar results frequently occur for notice; and, in more cases than one, the mere process of subdivision and multiplication will not be found sufficient to account for cellular development.

In the adult the phenomena of evolution continue to exist, and although far less extensive than during fœtal life, they are almost equal in importance. Thus, in certain animals, organs are found, which momentarily disappear, and are subsequently reproduced. Hunter observed that the sparrow's testicle, reduced during winter to the smallest possible bulk, promptly returns to its primitive size during the first days of spring. Mr. Stanlius has collected all the cases of similar reproduction which have been noticed in the animal series; thus in hibernating mammals, for instance, certain parts of the body are completely atrophied during winter, their functions being suspended for a time; some nervous ganglia are even found to disappear, more especially those connected with the genital organs; but as soon as the physiological activity of these parts is awakened, they are called a second time into being. Hunter also discovered that in the pigeon a peculiar organ, no vestige of which exists in the animal's previous state, is produced during the latter part of incubation; the mucous membrane of the gizzard becomes tumefied, grows vascular, and secretes a new substance, which serves for the nourishment of the young birds when newly hatched. In the humane species (as in all mammals besides), the rapid development of the mammary glands, towards the period of lactation, offers another instance bearing on the same point.

But must we consider these as the only phenomena of a similar nature which take place within the system? Do not mucous surfaces continually secrete new layers of epithelial cells? and is not

the epidermis incessantly renewed on the surface of the skin? Here, then, we discover evident instances of histological development going on during all the stages of life. With respect to muscular tissue, its tendency to increase in bulk under the effects of constantly renewed exertion is perfectly known; but it has been hitherto admitted that the constituent fibres of a muscle may no doubt increase individually in size, but that their number invariably remains the same. A German micographer, Mr. Budge, has lately endeavored to prove the contrary. A frog being reduced by abstinence to a state of emaciation, a small muscle is laid bare, and the number of its elementary fibres ascertained by direct investigation under the microscope. The animal being then properly fed, and gradually restored to a state of health, the same muscle is again examined; and, according to the ingenious observer, the number of its elementary fibres is found to have considerably increased, as well as their bulk.

Let us now consider the morbid manifestations of this power, which never suspends its action within the living body; we allude, of course, to those peculiar tissues which have been styled heteromorphous—an expression utterly condemned by German micographers; for morbid tissue is generated within the economy in strict conformity with the laws that preside over fœtal development. But, as we have previously seen, both nervous influence, and catalytical agency, give rise to a variety of diseases when deviated from their proper course; thus, also, in certain given cases, the power of histological evolution may create positive disorder in the system. An immense and uninterrupted movement takes place within the organs of which the body is composed, for the purpose of supplying new tissues, in the place of those which are no longer fit to accomplish the functions devolving upon them; let this unceasing activity be diverted from its proper channel, and the production of tubercle, cancer, and all kinds of morbid deposits, will be the immediate consequence. We find here, as usual, an evident connection between the phenomena of health and disease, between physiological activity and pathological influence. The question which lies before us must evidently be viewed in this light; and such is the principal object of Virchow's labors on cellular pathology, the leading features of which it is our purpose to make known to you. But before entering into the study of this particular point, a few general notions on the subject can not safely be dispensed with.

Some diseases, in the first place, result from total absence or considerable deficiency of normal evolution on a given point. The mucous coat of the intestinal tube affords us a fine example of incessant development. New layers of epithelium are continually being secreted, to line its inner surface; but a living medium, or blastem, is necessary to their production; and whenever this blastem itself happens to be altered in its essential properties—a modification which always occurs in inflammation—the epithelium disappears, and is no longer regenerated. Cholera also exhibits

another instance of this; for it has been indisputably proved that, in this disease, the vessels which ramify on the internal surface of the intestines are completely laid bare. In his admirable researches on the intestinal mucous membrane, Professor Goodsir has established that, after each meal, when absorption has taken place, the epithelium which covers the villosities falls off, and is renewed during the interval which elapses before food is again introduced into the digestive apparatus—a remarkable instance of the rapidity with which the re-production of tissue frequently takes place. But when, through some pathological agency, epithelium is no longer secreted, what results from its absence? No obstacle is henceforth opposed to serous exudation from the vessels; no protecting surface resists the introduction of various poisons into the economy; and, lastly, no regulating power of absorption any longer exists. In this manner innumerable diseases may be traced back to the suspended activity of normal evolution as their primary cause. The chronic inflammation of the trachea and bronchial tubes likewise destroys the vibratile epithelium, the utility of which is too well known to be expatiated on.

But we meet, at the same time, with other diseases, which arise, not from interrupted, but from perverted evolution. You are, of course, well aware that cells which pursue a regular course in their development comprise three distinct elements—Firstly, an envelope, or cellular paries, the physical properties of which take a prominent share in its action; secondly, liquid contents, the importance of which is principally derived from their chemical composition; and, lastly, a nucleus, in which the powers of development appear to reside. As soon as a morbid state of nutrition supervenes, the contents of the cell are liable to alteration. Whether pigment, or fatty substances, or calcarous salts are therein deposited, morbid tissues are gradually formed, and disease is introduced into the system; and, even, in similar cases, no pathological entity, no abstract principle of disease, is required to explain the fact. The deviation of physiological activity is its only cause. It is therefore evident that, in their successive phases of development, heteromorphous tissues entirely resemble the normal ones, and are subject to the same natural laws. To Müller belongs the honor of having been the first to proclaim this great principle; and he may therefore be deservedly styled the creator of cellular pathology. He was the first to open that path in which Virchow now treads with so much success.

The intercellular tissue, or blastem, is the medium from which the cells derive the elements of their formation; it is, according to Virchow's picturesque expression, their territory. Now, there exist various conditions in which the blastem no longer contains the principles required for the normal development of cells; it is, for instance, indispensable that it should always contain glycose, albumen, and fat; the absence of a single one of these three substances is an insuperable barrier to cellular evolution; and we, therefore, constantly find them existing as well in the tissues of the embryo,

as in those of the adult. But a variety of other conditions, essentially injurious to histological growth, may casually arise; and the existence of morbid blastems, which give birth to all tissues endowed with abnormal properties, may easily be conceived as of possible occurrence. Such are, no doubt, those very general dispositions of the economy, known under the name of diatheses, and which, when once they have firmly established their hold on a previously sound individual, are capable of being transmitted to his posterity; we must evidently consider them in the light of conditions of existence entirely new, which, in the first instance are accidentally produced (for disease must evidently begin somewhere), but which when once called into existence, exhibit a strong tendency to maintain themselves in being. Thus, when food, insufficient in quantity, or of an unwholesome kind, has ultimately reduced to a consumptive state an animal previously enjoying perfectly sound health, its offspring often inherits the morbid disposition which, in the parent, was entirely accidental; and syphilis, that well-known and fruitful source of heteromorphous productions, is similarly transmitted from parent to child.

Such pathological dispositions, or diatheses, result from causes various in their nature, but which concur in one point, viz: the disposition which opposes all modifications favorable to the patient's health. Sometimes they are the result of a profound change in the fluids of the economy; sometimes they originate in the introduction of peculiar poisons, which, after having once penetrated into the system, can in no way be expelled; if there existed, for instance, a poison which none of our organs could eliminate, it is clear that after penetrating into the torrent of the circulation, it would nowhere find an issue, and would in consequence become the origin of permanent modifications in the economy. The possibility of a similar case may be rationally conceived, by referring to the singular fact already mentioned, that iodine when once introduced into the blood, is not eliminated before a long space of time, on account of the affinity which the salivary glands exhibit for this substance; we have, therefore, in this case an instance of a body which can not (for a time at least) be expelled from the system; the animal is, therefore, during that period, laid under an iodic diathesis.

Viewing the subject in an entirely physiological light, it may be contended that individuals affected with local cancers are not properly, so to speak, in a state of disease, as long as the organs affected are not altogether essential to life; but when cancer attacks the limbs, the possibility of a surgical cure may at least be presumed, if not expected actually to take place; and the patient is not really diseased—that is to say, life is not directly brought into danger. Thus, when cancer attacks the liver, if a disease is not too extensive, the morbid productions are separated by large tracts of sound tissue, which fulfill, as in the healthy state, their physiological duties; bile is secreted as usual, and grape-sugar exists within the glandular tissue. But when, at a later period, the dis-

XUM

integration of the elements which constitute the morbid production have poisoned in some measure the whole economy, by pouring into the torrent of the circulation fluids, impregnated with the noxious principles, then, indeed, the affection becomes a general complaint, and its nature entirely changes. Cancer is not a diathesis in itself; but the subsequent cachetic state is evidently diathetical.

To conclude the history of these morbid evolutions, there yet remains one to be described; and this is imperfect nutrition. It is evident at the present day that the anatomical conditions, brought so prominently forward in Bichat's celebrated work (a), are quite insufficient to explain all the various modes of dying. Experience has taught us that patients often die without offering, in the post-mortem examination, the slightest modification in the anatomical condition of their organs. In the course of our physiological experiments we often see dogs arrived at the very last stage of emaciation, although the appetite continues unimpaired till the last moment. They sink from sheer exhaustion, while the lacteals are gorged with chyle; and, when opened, their bodies offer no trace whatever of pathological alterations.

The latent cause of this singular process is, that nutrition, when considered within the depths of our organs, is in fact, nothing more than a peculiar mode of evolution. The economy produces within itself substances indispensable to life; glycogenous matter affords us an example of this: formed within the body by a special process, it plays an immense part in histological phenomena. As soon as it fails to be supplied, epithelium is no longer produced; various diseases are the immediate result; and, under similar circumstances, life is inevitably brought to a close. The physiological act called nutrition, comprehends, therefore, two distinct parts: formation of cells is the first; creation of blastems is the second; and the latter is no less indispensable to our existence than is the former; as soon as pathological influences arrest either the one or the other, death is the consequence. There exist, therefore, two distinct modes of dying: sometimes life is cut short at once by an important injury to some essential organ; sometimes, on the contrary, it gradually fails through imperfect nutrition; and this latter termination is the ordinary result of acute diseases, when they prove fatal. In certain cases, for instance, glycogenous matter is no longer produced; and after a given space of time the patient dies, although the appetite remains unimpaired to the last moment. In making the autopsy, the lacteals will be found in a state of repletion; but when analyzed, the fluids of the economy no longer present the slightest vestige of sugar. Death then supervenes, and is the mere result of suspended activity in organs for which proper nourishment is no longer provided.

You therefore see, gentlemen, that to create laws especially intended for the use of pathology can not in in any case be justified;

(a) "Recherches Physiologiques sur la Vie et la Mort"

and that physiology furnishes, in every possible condition of health or disease, a key to the interpretation of vital phenomena. These general notions I look upon as indispensable to the study of particular points: it now remains for us, in order to complete this general survey, to examine the all-important question, "Whether medicines act on a sick patient in the same manner as on a sound individual?" and how far the results obtained in one case are fit to be compared with those observed in the other. It is our intention to examine this subject in the next Lecture: its study is an indispensable introduction to the various investigations we are about to undertake; for, after producing artificially—no matter how—a morbid state in an animal, we shall have recourse to the counter-proof, by seeking for therapeutical agents to effect its cure.

Duration of Gestation in a Medico-Legal Point of View. By B. L. Dodd, M.D., of Newark, N. J.

There is very little certainty regarding the precise duration of gestation in the human female. Fortunately, however, cases are quite rare, in which the legitimacy of a child is to be determined by the period of gestation. Yet, when such cases occur, they must, from the very nature of the case, cause great embarrassment to the medical witness. In view of this, it is very important that we should possess accurate data of all the facts derived from analogy or otherwise, bearing upon the subject.

To fix the "legal limit" of gestation is no easy task. In France 300 days are allowed. Dr. Simpson, of Edinburgh, uses the following language: "I believe our best criterion for fixing the 'legal limit,' or ultimate possible period of gestation in the human female, will be derived from careful and repeated observations upon the ultimate period of gestation in the cow; allowing always for the difference of four or five days of excess in the normal period of pregnancy in the cow, as compared with the human mother."

Acting upon this suggestion, I have collected the subjoined carefully recorded observations of the periods of gestation in 66 cases, of 13 cows, extending over a period of thirteen years:

Time of Gestation of Mr. J. R. Burnet's Cows—1844 *to* 1859.

1. Dolly—
   1846, 284 days, heifer.
   1847, 288 " bull.
   1848, 282 " heifer.
   1849, 296 " bull.
   Sold.
2. Molly—
   1844, 285 days.
   1845, 285 " bull.
   1846, 291 " "
   1847, 291 " heifer.
   Sold.
3. Suky—
   1844, 288 days, heifer.
   1845, 276 " "
   1846, 285 " bull.
   1847, 280 " "
   Sold.
4. Lilly—
   1844, 287 days, heifer.
   1845, 285 " no sex given.
   1846, 284 " heifer.
   1847, 288 " bull.
   1848, 293 " heifer.

1849, 295 days, bull.
1850, 290 " "
1851, 288 " "
1852, 292 " heifer
Last calf at 13 years old.

5. Jenny, large brindle cow—
1st calf at 3 yrs., 1847, 281 days, bull.
2d " 4 " 1848, 281 " "
3d " 5 " 1849, 286 " "
4th " 6 " 1850, 283 " h'fer.
5th " 7 " 1851, 287 " bull.
6th " 8 " 1852, 282 " h'fer.
7th " 9 " 1853, 284 " "
8th " 10 " 1854, 284 " "
9th " 11 " 1855, 288 " bull.
10th " 12 " 1856, 289 " "
11th " 13 " 1857, 282 " "
Butchered. This cow is daughter of No. 4, Lilly.

6. Sally, white cow—
1st calf at 3 yrs., 1848, 284 days, bull.
2d " 4 " 1849, 290 " "
3d " 5 " 1850, 292 " h'fer.
4th " 6 " 1851, unknown, bull.
5th " 7 " 1852, 278 days, "
6th " 8 " 1853, 279 " h'fer.
7th " 9 " 1854, 276 " bull.
8th " 10 " 1855, 279 " h fer.
The following spring, this cow died, before calving. Is daughter of Suky, No. 3.

7. Polly, out of Molly, No. 2—a mischievous black cow—
1st calf at 3 yrs., 1850, unknown, bull.
2d " 4 " 1851, 286 days, "
3d " 5 " 1852, 280 " h'fer.
4th " 7 " 1854, 283 " bull.
5th " 8 " 1855, 290 " "
Butchered.

8. White face, out of Dolly, No. 1—
1st calf at 2 yrs., 1850, 288 days, h'fer.
2d " 3 " 1851, 277 " "
3d " 4 " 1852, 293 " bull.
4th " 5 " 1853, 282 " "
5th " 6 " 1854, 284 " "
Sold.

9. Rose, brindle, born in 1851, from White-face, No. 8—
1st calf at 3 yrs , 1854, 282 days, bull.
2d " 4 " 1855, 276 " h'fer.
3d " 5 " 1856, 281 " "
4th " 6 " 1857, 284 " "
5th " 7 " 1858, 276 " bull.
6th " 8 " 1859, 287 " "

10. Cherry, lean, red cow, 1853, from Sally, No 6—
1st calf at 2 yrs., 1855, 274 days, h'fer.
2d " 4 " 1857, 279 " bull.
3d " 5 " 1858, 273 " h'fer.
4th " 6 " 1859, 279 " bull.

11. Suky, yellow, 1855, from Sally, No 6—
1st calf at 2 yrs., 1857, 275 days, h'fer.
2d " 3 " 1858, 279 " lost.
3d " 4 " 1859, 281 " bull.

12. White face, from Rose, No. 9, 1854—
1st calf at 3 yrs., 1859, 285 days, h'fer.

13. Sophy—mischievous red cow, bought at a vendue, at 4 years old, in 1856. Time with first two or three calves unknown.
4th calf at 7 yrs., 1859, 275 days, bull.

The time of gestation in 66 cases, varies from—
273 to 293 days with a heifer calf.
276 to 296 days with a bull calf.

From these tables, it will be perceived that nothing like uniformity exists; the difference between the longest and shortest periods being twenty days, while, at the same time, it will be observed that there is considerable difference in the same individual at different gestations; this amounts, in No. 1, to 14 days. These tables also show that, contrary to the popular opinion, the age of the cow has very little, if anything, to do with the length of the period of gestation, but that this depends rather upon the idiosyncrasy of the animal; some yielding a higher average, and some a lower. Another fact, deducible from these observations, is that the average length of gestation is longer by three days in bull calves, than in heifers.

The French law puts the legal limit of gestation at 300 days. If we take Simpson's position, deducting an excess of four days, the present tables would bring the legal limit in the human female to 293–4 days. I shall continue these researches, and they will in due time be recorded.—*Med. and Surg. Reporter.*

The Ophthalmoscope and its use in the Diagnosis of the Diseases of the Deeper Parts of the Eye By J. W. HULKE, F.R.C.S. Assistant Surgeon to the Royal London Opthalmic Hospital, Moorfields, and to King's College Hospital, London.

The invention of the Ophthalmoscope by Helmholz, in 1851, marks one of the most salient points in the whole history of Ophthalmic Surgery. Before that time, there were no means of ascertaining with precision the condition of the fundus of the living eye; the blackness of the pupil seemed to baffle all attempts to pierce it, and, cataract excepted, it was only in the advanced stages of a few diseases, such as cancer and sub-retinal dropsy, where the growth or floating tunic had approached the lens that a shrewd guess could be made.

The luminosity of the eyes of the carnivora and ruminants must have often engaged the attention of reflecting minds in all ages, and the red glow of the pupil of the human albino could not have altogether escaped notice; but it remained for later times to show that the fundus of the normal human eye, naturally shines with nearly as bright a reflection as that of the lower animals, to determine the conditions under which this phenomenon may always be observed, and to turn this knowledge to a practical account in the detection of disease. The honor of having made the first step towards this, belongs to Mr. Cumming, who communicated to the Royal Medical and Chirurgical Society, June, 1846, a very valuable memoir, embodying the results of a series of well-contrived experiments and observations by which he demonstrated that the fundus of the healthy human eye naturally furnishes a brilliant reflection; he also laid down the conditions necessary for seeing it; and in the modifications of its color and intensity he sought a means of distinguishing the different diseases of the choroid and retina. His labors did not, however, at the time, receive the attention they deserved, and were soon forgotten.

Erlach, a German Professor, who wore concave spectacles, unconsciously made a very near approach to the discovery of the ophthalmoscope when he noticed that a friend's eye shone brightly at the moment that his friend saw the image of a lamp reflected in his, the professor's spectacles; here the elements of the ophthalmoscope were accidentally present. Until a very recent date it was commonly taught that the blackness of the human pupil depended on the complete absorption by the choroid of the incident rays of light, for which purpose its dark pigment seemed to be a peculiar provision. But this explanation is now known to be incorrect, the apparent blackness of the pupil is a necessary result of the optical construction of the eyeball; for when the eye is fixed upon any luminous point, the rays emanating from it, and traversing the pupil, are collected by the lens, and other transparent media to a focus on the retina, where a corresponding image is formed; after which most of the incident rays are thrown back along the same paths by which they entered, and return to the point whence they

XUM

first started. But since some dispersion takes place, a few of the returning rays will reach the eye of an observer, whenever he occupies a position near the direct line that connects the source of light and the eye examined, in which case its pupil will appear to emit a reddish glow, and this is more vivid when the eye is not properly accommodated, because the dispersion is then greater. Now, under ordinary circumstances the observer does not occupy such a position with reference to the source of illumination and the eye observed, and therefore the returning rays do not meet him, and the pupil consequently appears to him black.

It is obvious that the most favorable position for the observer is one that coincides with the direct line between the light and the eye under observation. For the simple illumination of the fundus, Cumming's method was successful, but its practical application to diagnostic purposes was greatly limited, because it did not give images. A few years after the publication of Cumming's paper, Helmholz, by studying the optical construction of the eye with reference to the causes of the apparent color of the pupil, was led to the invention of the "*speculum oculi*," or ophthalmoscope, which enabled him easily and conveniently to illuminate the fundus of the eye, and to explore its minutest details. His instrument consisted of a mirror of superimposed oblong slips of glass, packed in a frame, which was fixed at one end of a short blackened copper tube, at an angle of about 30° to the axis of the tube, the other end of which had a contrivance for holding a concave lens. This end the observer applied to his own eye; a lamp was so placed that its rays fell at a convenient angle upon the mirror which threw them back upon the fundus of the eye under examination, where they underwent a second reflection, and returned to the mirror, this being transparent some rays passed through it, and traversing the axis of the tube and the concave lens, formed an image visible to the eye of the observer. It would be impossible in this place to notice all the modifications which the instrument has undergone. That which I prefer, and am in the habit of using is Liebreich's, which is a small, circular, slightly concave speculum, mounted on a handle, and pierced centrally with a much smaller hole than that generally made in the glass mirrors. Being metal, an accidental fall does not break it, and the smallness of the hole diminishes to a minimum the amount of central shadow in the illumination, that results from the absence of the reflecting surface from the centre of the speculum. A clip for holding a small convex or concave lens is hinged to the frame of the speculum, and folds against its back. Two larger convex lenses, of two and two and a-half inches focal lengths, are usually supplied with this ophthalmoscope, and the whole is packed in a strong portable case which is conveniently carried in the breast pocket of a coat. The source of illumination must be steady; a moderator lamp answers extremely well, but the flame of a candle always flickers so much, that it should only be used when nothing else is at hand. Gas is very convenient, the best arrangement that I have seen is one in use at Moorfields; it is

an Argand burner with very fine apertures, and has a piece of fine wire gauze fitted to the bottom, which subdivides the draught into a great number of smaller currents and makes it very uniform. A short chimney is preferable; a tall one produces too rapid a draught. The burner is fitted to a double jointed arm, which can be raised or lowered, and moved from side to side. The room having been darkened (a thick, lined, green baize blind, sufficiently excludes day light), the patient should be seated on a low chair by the lamp, which ought to be near to the side of his head, and on a level with his eye, which must be screened from its direct rays by a small, blackened tin shield fixed to the arm of the burner; or the same object may be gained by moving the lamp backwards, so that his face is in the shade. The observer standing or sitting before his patient receives the rays from the lamp, upon the ophthalmoscope applied to his own eye which looks through the central hole, and by a slight manœuvre throws them upon the patient's eye, the pupil of which at once shines with a bright red glow. The cornea and lens should be examined before exploring the fundus; beginners often mistake opacities in these structures for those in the vitreous humor and *vice versa*, and it requires some practice to estimate the depth at which opacities are situated. It is well to ascertain previously by oblique illumination, whether corneal nebulæ exist, as by so doing one source of error may be avoided. The ophthalmoscope is of great use in diagnosing the early stage of conical cornea, one side of the cone being illuminated whilst the opposite side is in darkness; it is also of the greatest service in detecting commencing cataract, lenticular opacities, which would otherwise escape detection, appearing as black lines and marks upon the red background. The lens and cornea should be examined with a less intense light than that used in exploring the deeper parts; over illumination should always be avoided, it is quite possible to miss seeing faint striæ in the lens when the light is too intense.

In some cases much information will be gained by ophthalmoscopically examining the iris; the edge of the pupil may be adherent to the capsule of the lens, or fringed with false membranes; perhaps a wound of the cornea has been received, there is a mark upon the iris, and it is uncertain whether a foreign body has passed through it and lodged behind. I recorded a case of this kind in the Ophthalmic Hospital Reports No. 6, which I saw through the kindness of Mr. Bowman, where, without the ophthalmoscope, it would have been impossible to have ascertained its true nature. An eye was struck by a chip of iron from a chisel. It became slightly inflamed, but got well in a week. A month after the accident the sight became misty. At this time a small scar was detected near the outer edge of the cornea, and a minute speck of uncertain nature was seen upon the outer part of the iris: it might have been a foreign body, or an echymosis, or uvea, or a complete perforation; the ophthalmoscope showed that it was a hole, When the pupil had been dilated with atropine the superficial parts of the lens were found slightly opaque, and near the posterior surface, be-

XUM

low the nucleus, a small piece of iron was plainly visible. For a complete examination of the crystalline lens, and thorough exploration of the fundus, the pupil must have been previously dilated with atropine; but where a mere glance at the entrance of the optic nerve and adjacent region is sufficient, a practised observer can obtain this through the undilated pupil and for several reasons, which affect private practice especially, it is better to abstain from the use of atropine, when we can do without it. The disfigurement caused by the great size of one pupil, and the inconvenience produced by the abeyance of accommodation are often complained of.

To examine the choroid or retina the observer must either approach the patient's eye very closely, in which case he obtains a highly magnified erect view of the fundus; or he holds a bi-convex lens of about two and a-half inches focal length before it, resting a finger on the patient's forehead to keep the lens steady. Holding the lens in this manner by a slight to and fro movement of his own head, he hits off the exact distance at which the image of the patient's fundus is formed; at this moment the confused red glow is replaced by a distinct view of the vessels, etc.

The color of the fundus varies greatly, and a knowledge of its modifications can not be too soon acquired. They mainly depend on the varying proportions of blood and pigment in the choroid. Where the pigment is sparing, as it generally is in fair persons, and the chorio-capillaris is naturally full, the color is a bright orange red; an excess of blood renders the red more decided; a larger quantity of pigment produces a duller or brick-red, which becomes brownish when the pigment is very abundant and the chorio-capillaris anæmic.

When the pigment is very plentiful the surface of the choroid seems to be mapped out in small brown islands separated by lighter yellowish bands indicating the arrangement of the larger vessels. This appearance is due to the greater abundance of the stellate pigment cells of the stroma in the interspaces between the vessels, than upon them. It was Cumming's belief, that the choroidal pigment reflected more highly than the other tissues in the fundus; but this is not the case, for the sclerotic reflects more light than all the other structures conjointly. The sclerotic reflection is a brilliant white, with a slightly yellowish tinge: in transmission through the choroid it acquires a reddish hue, subject to the modifications I have described.

The extreme tenuity and transparence of the retina render it a bad reflector, so that the membrane itself is not usually seen except by an experienced observer, who detects it as a faint haze overlying the choroid; it is best seen in dark eyes, where the abundant choroidal pigment moderates the splendor of the sclerotic reflection, and prevents it overpowering the fainter retinal one. The larger retinal vessels, however, yield beautifully distinct images. The entrance of the optic nerve is a very conspicuous object, and it comes into view when the patient slightly converges his eye. The old term "*papilla*" is inappropriate, because it does not project from the inner surface of the fundus, as was formerly imagined, except very

slightly at its margin; centrally it is slightly depressed; its outline is more or less circular; slight deviations are compatible with health, the most common is an ellipse with its long axis vertical; an oval or elliptical shape with the long axis horizontal is more rare, and I have never met with it except in disease. The optic-nerve-entrance, as I shall call it, has a pinkish white color; a paucity of blood in its capillary net makes it pale white; and when atrophied it has a glistening pearly bluish tint. An excess of blood reddens it, and in extreme hyperæmia its color so nearly resembles that of the adjacent fundus, that its situation is best found by tracing the trunks of the large retinal veins to their confluence. Generally, the arteria centralis pierces the optic-nerve-entrance more centrally than the vein; it appears on its inner surface either as a short single trunk that divides at once into an upper and a lower branch, each of which immediately subdivides dichotomously, in such a manner that a couple of large arterial branches take an upward and other two a downward course towards the ora serrata; or very frequently the artery subdivides within the optic-nerve, in which case several large branches appear simultaneously at the inner surface of the entrance. The arteries have a straighter course than their venae comites from which they are also distinguished by their paler color and smaller calibre. The large venous trunks often make their exit separately, and unite subsequently within the optic-nerve. In addition to the large primary branches several small twigs of the retinal artery radiate in various directions from the optic-nerve-entrance, with the reservation that none run outwards across the "yellow spot," which is supplied by capillaries only, the large branches also passing above and below so as to embrace it. The surface of the optic-nerve-entrance undergoes very important changes in disease, the chief of which is cupping. This is indicated by a bluish white color, and by a sudden diminution of the calibre and an abrupt change of the direction of the venous trunks at its margin. Cupping results from excessive intraocular pressure and atrophy.

Under certain abnormal conditions a spontaneous pulsation is seen in the retinal vessels, the visible movements of the blood being limited to the area of the optic-nerve-entrance, or but slightly overstepping it. This pulsation is generally associated with excessive tension of the globe, of which it is a sign; it may be produced artificially by pressure with the finger. A slight degree of pressure will evoke the venous pulse; it is a rhythmical movement of the blood in the vessel, which is emptied backwards against the course of the current; the swell and collapse of the vein alternate with those of the artery. A heavier pressure produces the arterial pulse, which is synchronous with that at the wrist; and a still greater pressure, arrests all pulsation in the vein and artery, and blanches the entrance of the nerve. When the patient looks straight at the opthalmoscope the "yellow spot" comes into view. In most eyes this part is characterized by a slight difference of color, which

is, however, readily overlooked by inexperienced observers; it generally has a deeper tint than the neighboring parts.

The hyaloid canal, with its obliterated artery, are only very exceptionally seen. I have twice observed a vestige of them in the form of a fine thread stretching forward from the optic-nerve-entrance towards the lens.—[*London Medical Review.*

[*To be continued.*]

New York Medical and Surgical Society—Discussion on Diphtheria.

Dr. C. M. Allin, of Flushing, related the histories of some cases of diphtheria which had lately come under his notice. About four weeks before he saw the first case, a child about six years of age was seized with an attack of well marked suppurative tonsilitis, which seemed to run its ordinary course for about a week or ten days, during which time an abscess formed and discharged; the swelling of the parts then began to subside. Two or three days subsequent to this, the child was suddenly seized with croupy symptoms. On examining the throat it was found that the swelling of the tonsils had returned, and at the location of the opening of the abscess there was discovered a large patch of false membrane, which covered the uvula, and extended down into the pharynx as far as could be seen. The child was very much prostrated, nearly pulseless, and was evidently rapidly sinking. The usual application of nitrate of silver to the parts, and the administration of stimulants was resorted to, but in vain, for the child died exhausted within twelve hours from the appearance of the first bad symptoms.

Three days after this, a younger child, in the same family, was attacked with sore throat, which presented the ordinary appearance of ulceration. In this case, however, none of the symptoms of prostration were present, neither did any diphtheritic membrane show itself, and the child recovered. Nothing more was seen of the disease for the next fortnight, when Dr. Bloodgood, the partner of Dr. Allin, was called to another case. He found the child very much in the condition of the first case, and learned that she had first complained of sore throat to her mother three or four days before. Various domestic remedies were resorted to, but the patient growing rapidly worse, Dr. B. was called in. On examination, the roof of the mouth, the throat, uvula, and all below the pharynx, as far as could be seen, was covered with a thick darkish yellow membrane. The countenance was very pale, and wore a very haggard expression; the pulse was very rapid and feeble, and there existed a marked croupy cough. Nothing, however, could save the child—it died the same evening. Early in the morning following, a child of the same family complained of sore throat. The tonsils and surrounding

parts were congested; but nothing more was visible. A gargle of chlorate of potash was prescribed, and directions were left to feed up the patient well. On seeing the case again in the evening, he found an ulcerated spot about the size of a split pea on the left tonsil, to which he applied nitrate of silver. Chlorate of potash was then ordered internally, in addition to its use as a gargle. The next morning Dr. B. found that the ulcer referred to was larger than before, and there was also another of the same character on the tonsil of the opposite side. He applied the nitrate of silver again, and at the suggestion of Dr. Allin, hydrochloric acid was added to the mixture of chlorate of potash, in the proportion of a drachm of the former to two of the latter, in eight ounces of water: of this a teaspoonful was prescribed every two hours. I saw the case with him, continued Dr. A., a day or two after, and found that membrane had formed upon the surfaces of the ulcers referred to. The whole roof of the mouth was congested, but the membrane was confined to the uvula and parts immediately surrounding. The strength of the patient did not seem to be much impaired, the pulse being only 110, and we had strong hopes that the progress of the disease might be arrested. The next day, however, the child fell off in strength, and we discontinued the potash mixture, ordering instead, the tincture of the sesquichloride of iron, to be used both as an internal remedy and a local application. At the time referred to, a portion of the membrane became detached, and, on being removed by the forceps, was found to be very tough in consistence, very like the slough of a nitric acid issue in general appearance. Yesterday morning (Friday) I called again to find the patient suffering from a croupy cough, while the surface of the throat covered by the membrane, had increased very much in extent. The child became more and more prostrated, and died at six o'clock the same evening—ten hours after the first symptoms of laryngeal trouble showed themselves. In neither of the two cases reported were post mortem examinations made.

Dr. Allin stated that Dr. Vedder (of Flushing) had also met with this disease. One case occurred in a child eighteen months old, who sank rapidly and died in consequence of the appearance of croupy symptoms following an ordinary sore throat. The treatment consisted in the internal administration of the sesquichloride of iron and the local application of hydrochloric acid. A post mortem examination was made. The tongue, pharynx, and lining membrane of the œsophagus, down as far as the cardiac orifice of the stomach, was found covered with the characteristic membrane. It also formed a lining for the larynx and trachea, extending as far into the lungs as the minuter divisions of the bronchial tubes. The lungs, aside from this, were only moderately congested. He stated that Dr. Vedder was treating, at that time, for diphtheria, a young girl sixteen years of age, who was lying at the point of death. A blister was applied in one of Dr. Allin's cases, but the abraded surface was not covered with a diphtheritic membrane. In all the cases that recovered the convalescence was very much protracted.

Dr. A. C. Post referred to a case of this disease in a young woman, twenty-one years of age, which proved fatal in the course of the night in which she was attacked. Her child died a short time previous of the same disease. In both, the membrane made its first appearance upon the tonsils.

Dr. A. Clark had seen, since a year ago last autumn, somewhere between sixteen and twenty cases of diphtheria. The oldest case that he had seen prove fatal, was that of a lady, twenty-two years of age. The oldest person that he had seen affected with the disease was not over thirty-six years of age. But a small number of post mortem examinations were made, but they were however sufficient to show a very great variety in the extent of the newly formed membrane. In some instances it extended throughout the pharynx, lining the larynx and trachea, and going down as far as the bronchial tubes could be conveniently opened, besides extending into the posterior nares. In one case this membrane could be seen from the front plunging up the nostrils. In other cases the larynx was not at all affected, the diseased action being confined to the pharynx and œsophagus. On the other hand, he had found the deposit confined to the larynx only. In some of the cases where no post mortem examinations had been made, immense tubes or bands of thick leathery matter had been expectorated, but without being attended with any relief in the laryngeal symptoms, except in two instances, where recovery took place. In all the cases, so far as he had the means of knowing, the membrane was visible upon some portion of the fauces, most commonly upon one of the tonsils, before any symptoms of dyspnœa showed themselves, and before there were evidences of the formation of the deposit in any other part. In nearly one-half the cases in which fatal results had occurred, such a state of things took place without dyspnœa, but with a set of symptoms such as he could hardly compare with those of any other disease. There was muscular force enough, yet there was a very marked feebleness of the pulse, which was attended with blueness of the nails and lips. He thought that it was a condition very apt to deceive a physician who saw such a case for the first time, and lead him to suppose that recovery might take place. In relation to the mode of invasion of this disease, Dr. C. stated that it had been exceedingly variable. I should think, continued he, that in the cases that I have seen, the severity of the symptoms of invasion have had some relation to the age of the patient, being more severe in those that are older. I do not, however, wish to make this a statement: it only is the result of a limited observation. In some children the ordinary symptoms of sore throat first present themselves, the membrane forms slowly, but the issue in such cases is hardly less fatal than that of others. In other instances the invasion is very brisk, the patient has two or three chills in the course of the day, while in the more insidious forms referred to the duration is a fortnight including the early illness. In those cases that recovered the convalescence was very much protracted. In

answer to a question from Dr. Post, he stated that he recollected one case that lasted but three and a half days.

Dr. McCready next cited the following case: A patient of his, a child, was first seized with the ordinary symptoms of sore throat. In the course of a day or two membrane showed itself upon the tonsils, but soon disappeared entirely, and everything pointed towards a recovery. After the lapse of about a week, however, membrane appeared in the nostrils, when the child became suddenly collapsed and died within twenty-four hours after. In that case it seemed that the disease disappeared from the tonsils and afterwards selected the nostrils as its seat.

Dr. Clark stated that in one case he saw with Dr. Crane, death took place in a somewhat similar way. All the membranes had been discharged, and the boy was regarded as fairly convalescent. I visited the case one morning about ten days after the severe symptoms, and thought him doing well. He was able to sit up a considerable portion of the day; his strength was increasing, and his friends were encouraged. About two o'clock of the same day, Dr. Crane was sent for, and found the child pale and sinking; the pulse at times would be scarcely perceptible, then it would become more full, but the exhaustion was so extreme that the slightest movement, even raising the head, would bring on a fainting fit. I arrived in time to see the child breathe his last. His appearance at the time I saw him was that of a person dying from internal hemorrhage, and the history of the fatal attack tended to strengthen the suspicion. No autopsy could be obtained. In regard to treatment, Dr. Clark stated that when he first met the disease last autumn, the treatment was very varied and unsettled, and he was not satisfied with any method then in use. Seeing a statement that the Dublin and Edinburg physicians were disposed to rely upon the muriated tincture of iron, he began to advise that remedy. He had since fallen into the practice, now generally adopted here, viz: sustaining the patient by quinia, given freely, the muriated tincture of iron, wine, &c., and interfering but little with the membrane. He did not favor the use of mercurials on account of their constitutional effect. Bretonneau used them at first, but was forced to discontinue them for this reason. In reply to the question, whether he regarded diphtheria a different disease from the croup, Dr. Clark said that he did; one difference was the frequent occurrence of an abundant exudation in the substance and upon the surface of the membrane, and then the appearance of the membrane itself, the border of the patch being surrounded by an intensely red margin, giving it the appearance of a slough about to separate.

Dr. Buck said he had seen patients die even after the separation of the membrane. In reference to treatment, he stated that Dr. Lindsley's great reliance in these cases was mercurial fumigations. He had seen recoveries under its use, and in one, particularly, it was continued day and night for eight days. The disease seemed to be kept in check during its use, but any cessation in its applica-

tion was followed by an aggravation of the most unpleasant symptoms, and it was not until the eighth day that the relief obtained was permanent. The convalescence was gradual and protracted. In this case the exudation on the tonsils was recognized at the first visit, and within twenty-four hours after hoarseness and laryngeal symptoms appeared. He was so favorably impressed with the value of his remedy that he advises its thorough trial. The fumigation was effected by enveloping the child's head with a blanket, and then heating an iron body to a red heat, throwing upon it cinnabar, when the whole was passed under the blanket. When the child was very small it was necessary that the attendant should also be subjected to the fumigation.

Dr. McCready said that he had seen a case with Drs. Parker and Van Buren, which was successfully treated by the method of fumigation.

Dr. Jas. R. Wood remarked that Dr. Lindsley had used the cinnabar in fumigations in croup for many years. He had himself tested its efficacy, and could report favorably. Diphtheria, he continued, is a different disease from inflammatory croup, being attended with more nervous prostrations, and the patient running rapidly into a typhoid condition. It is essentially a blood disease. Again, they differ in the location of the exudation; in true croup it does not always commence upon the fauces and extend unto the larynx; but in diphtheria he had always first discovered the exudation in the fauces or upon the tonsils, and the laryngeal symptoms supervened soon after.

Cephalic Version. By C. A. LOGAN, M.D., of Leavenworth City, Kansas. Read before the Leavenworth Medical and Surgical Association.

The obstetrical manipulation, improperly termed Cephalic Version, has of late years, as well in America as elsewhere, been revived and urged upon the attention of the profession, as being an operation far more easily executed, and attended with results of more favorable character in transverse presentations, especially those of the shoulder, than its *antipode*, podalic version. Cases have been reported in glowing terms, setting forth the satisfactory issue of the operation, and recommending it as a substitute for turning by the feet, in all cases where the shoulder or back may present at the superior strait.

The practice is not a new one, as the ancients believed that all labors to be natural, must present with the head, and the most strenuous efforts were made to correct any deviation from it. When Ambrose Pare and his pupil, Guilleman, however, demonstrated the practicability and comparative safety of bringing down the feet, the operation above alluded to fell into disuse and was

not revived again, until practiced by Flamant, the Professor at Strasburgh.

After him, came many German and French writers eulogizing it in the highest terms, and presenting cases and statistics in support of the practice. Almost the entire British and American profession, however, were united in its condemnation, and that too with a fervor and warmth that proves, I fear, too conclusively, that their denunciation was premature and unbacked with an amount of experience sufficient to warrant it.

Our own countryman, the celebrated Dr. Dewees, in speaking of presentations of the arm and shoulder, disposes of the subject after the following fashion:

"The indication in these presentations is to bring down the feet and deliver. It has, however, been suggested that we may attempt the restoration of the head to the cavity of the superior strait by removing the shoulder from it; I believe this to be altogether theory—*I do not even advise the attempt;* for independently of its difficulty, I am persuaded that it would be attended with more pain and risk to the patient, and injury to the child than a well conducted turning."

From the language used, we are justified in the inference, that the great author never attempted the operation himself, but acting upon his persuadings of what must be the result, was content to stifle all investigation of its actual merits, or the particular cases in which it was applicable, by his precept, which with many, in this country at least, amounts to a positive obstetrical law.

Nor does Prof. Meigs differ very materially from this wholesale injunction of Dr. Dewees if the following quotation is any indication of his views:

"It may be, that those old practitioners of the days of Queen Elizabeth may have sometimes succeeded by pushing up the presenting shoulder, in getting the head at least to come to the strait again, but such an event *in any case,* appears to me most improbable."

Notwithstanding all this, however, the American journals for several years past, have been interspersed with reports of cases in which Cephalic Version has been performed with success, and with a greatly supposed advantage over Podalic Version. The most elaborate paper upon this subject, that I now remember of, was presented to the Ohio State Medical Society by Prof. M. B. Wright, of Cincinnati, in which the whole matter was reviewed, and I think, some five cases detailed as occurring in that gentleman's private practice, in which the lives of all the mothers were saved, and probably those of a majority of the children. This result was certainly very satisfactory, as statistics have shown that rather less than the life of one child out of every three, is sacrificed in the operation of turning by the feet.

That the Cephalic Version is less inimical to the life of the child is maintained by the English authority; Dr. Ramsbotham, who says that "of the three modes of treatment, (cephalic version,

podalic version and bringing down the breech,) that of raising the shoulder and bringing down the head, would be the safest to the child, because there then would be but little chance of pressure on the funis umbilicalis." He goes on to state his own convictions, however, that of the three modes it is the most dangerous to the mother and the most difficult for the operator.

Velpeau, again, advises as follows: "Cephalic Version may be attempted—1st, in a well-formed pelvis where no other accident has happened except a vicious position of the fœtus, and the head is found in an inclined position in the vicinity of the strait; 2d, in presentations of the shoulder, back or anterior part of the thorax, provided the arm is not prolapsed and the uterus not too much contracted; lastly, it seems proper to try it whenever the feet are further removed from the strait than the head is, and where it is probable that the labor would terminate spontaneously if the head were at the strait."

Numberless authorities on both sides, might be cited, each party contending for the exclusive utility of each operation, but as in all such instances, I am of the opinion that the truth will be found to lie between the extremes.

The celebrated Cazeaux, is very happy in his expression of this fact, in the following language:

"At the present day it would be improper to embrace either opinion exclusively, for some cases are better suited to the Cephalic Version, while there are others, on the contrary, where the podalic one is alone practicable; consequently both operations should be retained in practice, leaving the judgment of the accoucheur to determine the cases where the one or the other ought to be preferred."

Were we all as anxious in our endeavors to discover correct principles, as this truly great man, we should find fewer men engaged in asserting sweeping propositions and pertinaciously adhering to them, because they were the authors of them or had been engaged in their defense.

I think there can be little doubt of the fact, that in certain cases, contrary to the opinion of Professor Meigs, that the "event" (cephalic version) is not only probable, but is quite easy of accomplishment and affords a better chance for the life of the child, and with as little danger to the mother, as podalic version.

These cases I conceive to be those in which the membranes are intact or but just ruptured. While the fœtus is swimming in the liq. amnii, it is protected from the direct contractions of the uterus, and necessarily possesses a great amount of mobility, therefore it can be no *very* difficult matter to shift the position of the child by making pressure upon any particular part.

Velpeau, indeed, and I believe Flamant, profess to be able to accomplish this through the abdominal parietes simply, a procedure, which in this age of practical demonstration, would receive more credence from those witnessing it, than from those reading it. However this may be, I am convinced that it is practicable to sub-

stitute the head for the shoulder, under the conditions above named, as I myself succeeded in doing in a case which I shall now relate.

I was called on the night of April 19, to see Mrs. H.——, in labor with her second child. I ascertained that she had been having pain for six hours. Her first labor had been a natural one, and terminated in eight hours. She was a robust, healthy woman with a capacious pelvis. The character of the pains demanding it, I proceeded to make a vaginal examination. The first thing which struck me, was the rather peculiar shape of the membranes, not being strictly of a conical form as has been described, but still elongated as it were, and not of the rounded or oval shape which attends a head.

The os was dilated to its fullest extent, but I found it impossible to reach the presenting part with any satisfaction. The pain at this time leaving her, I proceeded to make an examination through the abdominal walls, according to the directions of M. Chailly. By a very careful percussion, I found that the long diameter of the uterus presented itself in a direction transverse to the mother's body, and my suspicions being aroused as to the true nature of the case, I fancied I could feel the hard, rounded head of the fœtus in the left iliac fossa. Certain it is, that the pulsations of the fœtal heart, were heard with the most distinctness in the right iliac fossa.

Being strongly impressed with the idea that I had a transverse presentation to deal with, and that most probably a true shoulder case, I determined, should my doubts be realized, to try the efficacy of Cephalic Version, without, however, jeopardizing the conditions favorable for a turning by the feet, as experience in a previous case, demonstrated to me the reliability of the latter.

It being inconvenient to procure an assistant, I relied upon the aid of an experienced black nurse.

A second examination was then thoroughly instituted, and I determined that the case was a shoulder beyond a doubt, and that the head was in the left iliac fossa; but whether it was the right or left shoulder, I could not then settle in my mind owing to the entirety of the membranes, which I was very careful not to rupture.

As the woman would lie in no other position than on her back, having been previously confined so, I placed her cross-wise in bed, near its edge. The hand of the nurse was then placed on the abdomen over the region of the pelvic extremity, and directions given to make pressure upward and inward toward the median line. My left hand was applied over the child's head with the intention of pushing it toward the strait at the proper time. The right was gently introduced and three fingers placed upon the shoulder, and firm pressure made in the absence of a pain, obliquely from left to right and from below upward. After some little time thus spent, being obliged to desist during a pain that ensued, I had the satisfaction of feeling the shoulder recede before my pressure, and in a hurried effort to grasp the head, as might have been

expected, I broke the membranes. A violent pain immediately came on, but I succeeded in fixing the head in the superior strait in the second position of Churchill, (the *right* shoulder had presented) and retaining it there until it was forced down into the excavation.

The child was born in forty minutes after this procedure, and although small, was very vigorous. This operation, although crowned with a success that surprised me, I am not disposed to go off into ecstacies over, and declare that it is *the superior* of all others and that it *alone* should be practiced. On the contrary, I am satisfied that, had the membranes been ruptured for any length of time, so as to permit the uterus to contract firmly upon the body of the child, and wedge it down into the cavity, that no amount of force that could be applied consistent with the integrity of the soft parts of the mother, could have dislodged it.

In such a case turning by the feet would have procured a safe termination to the mother, if properly and adroitly performed, although as in the other case, the longer the waters have been drawn off, the more difficult becomes the operation. That there is danger in this last operation to the child, (as one to three according to English statistics, and as one to seven according to French), none will deny; yet evidently, the fœtal mortality is increased by a too hasty delivery of the body, which, causing the head to depart from its flexed position on the chest, throws the occipito-mental diameter of the child's head in relation to the oblique diameter of the superior strait, producing a vexatious delay in delivery; indeed, requiring manual interference to again bring the diameters into relation, during all of which time the cord is being compressed.

On the other hand, it is fair to admit that in some cases of Cephalic Version, we will have a prolapse of the cord, during the recession of the shoulder, and this will increase the mortality in this operation. It appears, then, that in certain cases and at particular times, the one operation may be advantageously used, and in others, the other. Therefore I take it, that no distinction can be drawn between them, so far as superior merit is concerned, in every case.

It is time that we learn to view the cases that may fall under our care, in a rational way, and take advantage of the circumstances in each particular case to apply the proper remedy. The application of certain modes of treatment to certain states, without looking behind the curtain to inquire what may be the precise condition present, is like treating disease by a name, and is vastly out of date. I have learned to regard all men who vaunt forth a remedy, manual or other, as a specific, suited to all cases and conditions, either as enthusiasts, or as dishonest in their assumptions, and unsafe to heed in either event.

It is only by a careful observation of facts, that rational deductions can be drawn, and he who presents the greatest number of these to the world, contributes most largely to the foundation of

the temple of true science, which all of us are endeavoring to rear, some indeed, so clumsily and unwork-manlike that the efforts of many are constantly required to undo the evil of others.—*Kansas City Medical and Surgical Review.*

Introduction of the Tea Plant into the United States.

A few years ago the United States Government was led to take measures for the introduction of the tea plant into the confederation, with a view to establishing, if possible, the preparation of tea in some of the States. The success that had attended Mr. Fortune's operation for the East India Company, having induced them to consult that gentleman, it was finally arranged that he should again proceed to the Celestial Empire, for the purpose of obtaining as abundant a supply of plants for the west as he had secured for the east. His mission has been attended with the most complete success. A minute of the United States Patent Office now before us, states that he was dispatched in March, 1858, that he had obtained seeds enough to plant one hundred acres, a large portion of which had arrived by the 20th June, 1859, and was flourishing in a propagating house, especially constructed at Washington for their reception. Applications for plants were even then made in such numbers, that it had become necessary to refer to Congress for instructions as to their disposal.

Mr. Fortune returned to England some time ago, and has favored us with the following interesting report upon the final result of his expedition:

"It will be seen by the accompanying papers that the results of my expedition to China, for the Government of the United States, have been very satisfactory. In little more than one year about fifty thousand tea plants, and many other vegetable productions useful in the arts, or of an ornamental character,* have been introduced to America from the tea countries of China.

"This success was mainly owing to experience acquired during former visits to these countries. Arriving in China in the month of May, I spent the first few months in visiting numerous tea farms in different parts of the country, where I made arrangements with the natives for large supplies of seeds as soon as they ripened in the autumn. In October and November I repeated my visit to the same districts, and everywhere found supplies of seeds awaiting me. In former transactions with these tea growers, I had always treated them kindly and liberally, and I now found the advantage that resulted from such treatment. Seeds had been saved for me in all directions; I had only to pick them up and proceed onwards,

* For example: the Camphor and Tallow trees, Chusan Palm, green dye plant (Rhamnus), manure plants (Trifolium and Coronilla), Wax-insect tree (Fraxinus chinensis), Yang-mae (Myrica sp.), southern fruits, such as the Leechee, Longan, Wampee, &c., &c.

and was thus enabled to get through a large amount of work in a short space of time. In December I reached the seaport of Shanghai, with the whole of my collections in excellent condition.

"Tea seeds will not retain their vitality long if kept out of the soil. In order to guard against all risk, a large number of Ward's cases had been previously prepared and filled with earth, and to these the seeds were immediately transferred. The first shipment was made in December, a few days after my arrival in Shanghai. Knowing that the vessels would probably arrive in America in the middle or end of March, I thought it likely the seeds would remain in the earth without vegetating during the voyage. Instead, therefore, of sowing the seeds near the surface in the usual manner, I mixed up large quantities with soil, and filled the case up with the mixture of earth and seeds. By this simple plan many thousands of seeds were carriad to their destination, and when they arrived there were as sound as if they had been all the winter on a Chinese seed-bed. Of course it was necessary to unpack them immediately on arrival, and sow them thinly in other quarters. In the other cases which were shipped later, this mode of packing would not have been safe. The seeds were therefore sown thickly and covered with earth in the usual manner, and in this state might vegetate on the voyage without any risk whatever. In the one case the object was to get the seeds quickly to their destination without vegetating, for had this taken place the experiment would have been a failure; in the other they were placed in circumstances favorable for vegetation, and the only change likely to occur would be this, that in China they were only seeds, while towards the end of the voyage or at its termination they would have changed into healthy young plants.

"The watering, closing the cases, shipping, and last, but not least, securing the good-will of captain and officers, were all important operations."

Not only has the tea plant been thus introduced to the Eastern States, but it has found its way also to the Western; and our friends on both the Atlantic and Pacific sides are with their usual energy setting about growing it.

But there still remains the question whether they can turn it to profitable account. That their climate will be found to suit in some of the vast regions of the West there can be no reasonable doubt. But merely growing tea plants will not make commercial tea. The difficulty lies in the preparation of it, an operation which, as conducted in China, demands an enormous quantity of labor—the article of which beyond all others the United States have the least to spare. But is it really necessary to prepare tea Chinese fashion?—to chop it up into little balls and twist it into all sorts of queer shapes with all sorts of names, in order to give it its dietetical value? Surely not. We have ourselves found out that the painted article called green tea is not very wholesome, and by no means the better for the paint; and we quite anticipate that our

United States friends will have even already projected some sort of machine that will produce good marketable tea without the assistance of human hands. This indeed, we know, is the opinion of Mr. Fortune himself.—*London Pharm. Journ. from Gardeners' Chronicle.*

New Application of Chloroform in Neuralgia and in certain Rheumatic Complaints.

[At a meeting of the Medico-Chirurgical Society of Edinburgh, Mr. Little, F.R.C.S.E., of Singapore, made the following communication, which we reprint from the *Edinburgh Medical Journal* for April, 1860.—Eds. *Boston Med. and Surg. Jour.*]

During my residence at Singapore, East Indies, I was at one time in the habit of using liquor ammoniæ to produce an immediate blister, when instantaneous counter-irritation was thought necessary in certain cerebral affections, &c.—a piece of lint soaked in ammonia being applied to the part, and covered with oil-silk, when in a few minutes so much irritation was produced as to raise a blister. In administering chloroform to my patients, I noticed that their lips were often partially blistered by it; and recollecting the mode of using the ammonia, I thought of trying the chloroform in the same way, but found that neither oil-silk nor gutta percha tissue would answer. I then used a watch-glass to cover the lint soaked in it, and with the best effect.

The manner of application is to take a piece of lint, a little less in size than the watch-glass to be used (which need not be more than two inches in diameter,) to put it on the hollow side of the glass, to pour on it a few drops of chloroform sufficient to saturate it, and then to apply it at once to the part affected, keeping the edges of the glass closely applied to the skin by covering it with the hand, for the purpose of keeping it in position, as well as of assisting the evaporation of the chloroform. This may be done from five to ten minutes, according to the amount of irritation wished for.

The patient during this time will complain of the gradual increase of a burning sensation (not so severe as that produced by a mustard sinapism,) which reaches its height in five minutes, and then abates, but does not entirely disappear for more than ten minutes.

To ensure the full operation of the remedy, it is necessary that the watch-glass be rather concave, that it be closely applied to the skin, and that the hand applied over it be sensibly warm. The immediate effect of the application is to remove all local pain in neuralgia, and relieve that of rheumatism.

Its effects on the skin are at first a reddening of the cutis, which in some cases is followed by desquamation of the cuticle; but this depends on the part to which it is applied, and also upon the sus-

XUM

ceptibility of the individual. In some cases, if the application is prolonged, a dark brown stain remains even for a week or ten days, the same effect as sometimes follows the use of a mustard sinapism.

In Singapore I have used chloroform after this fashion in various neuralgias of the face, in inflammations of the eye and ear, in one case of angina pectoris, in several cases of neuralgia affecting the abdominal parietes, in lumbago, dysmenorrhœa, and in pain attending congestion of the ovary, &c.

Personally, I can testify to its great efficacy in two severe attacks of rheumatic inflammation of the eyes, in which the pain came on periodically about 3 A. M., with such severity that I thought the loss of sight itself would be preferable to its continuance. All other remedies, such as blisters, leeches, opium externally and internally, belladonna, &c., were of no avail in soothing the pain; water, almost boiling, applied by a sponge, giving only a little relief. I then thought of this use of chloroform, remembering how much it had benefitted my patients in other similar affections. The first night, the application of it to the temple relieved the pain in ten minutes; on its return the next night, the application again relieved it; and four times only was it required to remove completely the local pain; allowing, in the meantime, constitutional remedies to produce their effect. Since my return to this country, I have recommended this remedy on several occasions to persons suffering from neuralgia of the face and head, and always with the same good effects as in India; and the other evening one of my domestics was quickly and effectually relieved by it of a painful spasmodic contraction of the platysma myoides muscle, which prevented her raising her head from the chest. The chloroform was applied as directed, with immediate benefit, and next morning she was quite well, though in previous attacks several days elapsed before relief was obtained. I have mentioned this method to several medical men of this city, who have found it of great benefit; and that it may be more extensively known, is my reason for now bringing it before the profession.

Dr. Keiller mentioned that this plan had been tried with success in his wards.

Dr. Wright had used chloroform for similar purposes, by pouring it into a bottle containing blotting-paper, and applying it over the affected painful part. He has found it sometimes produce vesication, and leave a mark on the skin; but it had been effectual in removing pain.

[Mr. Little has received the following letter from Dr. Sclanders, House Physician to Dr. Keiller in the Royal Infirmary:

ROYAL INFIRMARY, March 14, 1860.

MY DEAR SIR:—I have much pleasure in giving you the result of my experience in regard to the external application of chloroform in the way proposed by you. Soon after you made me aware of it, I saw a friend of mine, who suffered frequently from neuralgia of the left forehead. I proposed the remedy to him, and with the

effect of immediately removing the pain. Owing to my having kept it too long applied, vesication ensued. Since then he has had no return.

I have since used it in several cases of neuralgia of the ovary and pleurodynia, as also in two cases of rheumatic pains in the joints, with marked benefit. I am yours truly,

DR. LITTLE.] ALEX. SCLANDERS.

On the "Non-Cosmopolitism of the Human Races." By BOUDIN. Extracted and translated from the "Journal de la Physiologie." By Prof. WM. L. BISCHOFF, M.D.

Is man cosmopolitan, as has always been believed; is he confined in order to continue and propagate his race to certain countries more or less similar to his origin? In other words can man be acclimated on all points of this globe, or is his acclimation circumscribed, limited, dependent upon certain conditions of climate, locality, medium?

This problem is certainly one of the most important in anthropological science; for on its solution depend the great questions of colonization and the supply of imported labor to those regions that cannot otherwise supply their wants. It touches thus upon measures of social economy, particularly important to this section of the country.

It is astonishing to see how slightly this important question of acclimation has been treated heretofore. "A firm resolution," says Malte-Brun, "not to be conquered by disease is according to all physicians, one of the most effectual means to resist the influence of a new climate." Our body waits for orders only from intelligence. (Geogr. Univ. 5 ed. p. 560.) Thus according to this celebrated geographer man only has to will it, to cause the organism to accommodate itself to all the difficulties of a new medium, or a new climate.

On the contrary, Boerhaave, ignorant of the simplest facts of physiology and meteorology holds: "that no animal with lungs, can live in an atmosphere the temperature of which is equal to that of his blood." From this would result that man would infallibly perish under a temperature of 38° to 39° Centigrade, (100—102 degs. F.) Cassini thought that no animal could live in a place elevated more than 4767 metres (about as many yards) above the level of the sea, while man actually inhabits places having an elevation of about 4800 metres.

The truth is, that man, in his migrations upon the globe, is neither as ductile nor fragile as theorists have made him out to be.

To the experimental method, to observation only, belongs the right to define the limits of his faculty of acclimation.

In favor of the cosmopolitism of the human races, the acclimation of a certain number of plants and animals was adduced. But first it is not admissible to deduce the cosmopolitism of man from that of plants and animals, and in the second place, the facility of acclimation of plants and animals has been singularly exaggerated.

To be acclimated, a plant must be able to reproduce itself without the assistance of man. Now, we all know that in Europe the cereals cannot reproduce themselves if left to themselves, but disappear. In Provence the olive trees are killed by the frost nearly every twenty years, and so likewise the orange trees in Liguira. The potato disease has shown, that this precious vegetable, that was believed to be won irrevocably, may be lost to us one day.

In regard to animals, we encounter the same difficulties of acclimation. Of the one hundred and forty thousand species that constitute, according to the most recent estimation,* the whole animal kingdom, only forty have come under the power of man; and of these only three species from America, have been acclimated in Europe, viz: the turkey, Muscovy duck and the Guinea pig.

Two thousand years ago Vitruvius said: "Quae a frigidis regionibus corpora traducuntur in calidas non possunt durare sed dissolvuntur; quæ autem ex calidis locis sub septentrionum regiones frigidas, non modo non laborant immutatione loci valetudinibus, sed etiam confirmantur."

As far as it concerns the European races, modern facts tend to confirm this opinion of Vitruvius. Indeed up to this day, the European has not succeeded in implanting his race in the north of Africa, much less in the tropical regions. Never could the Mamelukes, in Egypt, have recruited themselves otherwise than by the importation of Circassian slaves. Their children succumb. Mehemet Ali had ninety-four children, of whom only three survived him. In Algeria, not a trace is found of the descendants of the Romans. The infants of European parents born in Africa, says Vital,† chief physician of the Hospital of Constantine, these twenty-three years, are swept away without pity. Children born from negro parents fare even worse.

The author now brings forward an array of facts, taken from the most reliable statistical records, and proves conclusively that certain races do not thrive in certain places, as can easily be shown by the excess of deaths over births; and that the same races transferred to their original localities or to others, commence to thrive.

Very startling facts are deduced from these statistical researches. Thus while they prove the almost entire incompatibility of the European races with the tropical countries of the Northern hemisphere, they show the contrary in the majority of the colonies of

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* J. Geofray Saint-Hilaire, Hist. nat. gen. Paris, 1860. p. 35.

† Gazette Medicale, 6th Nov., 1852: Paris.

the Southern hemisphere. Thus the rate of mortality is much less in New Zealand or Australia, (though nearer to the equator than Algeria), than that of England. The same may be said about the former Spanish colonies in South America, Montevideo, Buenos Ayres, and the Dutch colonies at the Cape of Good Hope and Port Natal. In Daity, though situated under the thermal equator, the mortality among the French garrison, (observed during eight years) did not exceed one per cent., while in France it reaches in the average about two per cent.

The effect of migration from south to north is not beneficial to all races; at least not to the negro race. Thus the negro race can not maintain itself in Algeria nor even in Egypt, except by incessant immigrations.

But not only the migration from south to north proves prejudicial to the negro race, but in almost all instances also, the displacement eastward or westward. One might be led to the belief that the negroes, transported to the Antilles, would find their conditions excellent for the propagation of their race. But there, always the deaths have exceeded the births. The most remarkable fact revealed by the statistical tables, says our author, is that while in the West Indian Islands the negro race is gradually dying out, in the neighboring continent, (the Southern States of the North American Union) the race is thriving exceedingly. In 1810, (two years after the discontinuance of the slave trade), the number of slaves amounted to 1,190,930. In 1850 this number was raised to 3,178,055.

The conclusions which the author draws from the facts he has so diligently collected may be summed up to be:

1. It is not at all proven that the different human races are cosmopolitan as was believed heretofore, but a great number of facts rather tend to establish the contrary.

2. The faculty of acclimation out of the place of origin, varies according to race, and this variation manifests itself by corresponding differences in the proportion of cases of sickness and deaths occuring.

3. It is not proven that the European as an *agriculturist* can perpetuate his race in the tropical regions of the northern hemisphere.

4. The European can more easily acclimate himself in a great number of the warm and even tropical regions of the southern hemisphere.

5. The European can stand better migrations into cold regions than into warm ones.

6. The negro race cannot be acclimated in the south of Europe nor even the north of Africa.

7. It is proven that the negro race cannot perpetuate itself either in the French or English Antilles, or in Bourbon or in Mauritius or in Ceylon, though all these islands are under the tropics.

8. *The negro race seems to acclimate itself in the Southern States of America.*

XUM

9. *In the Northern States of the Union the negro race is perishing and at the same time furnishing an enormous contingent for the lunatic asylums.*

10. *The Jewish race acclimates and perpetuates itself in all countries.*

11. *The Jewish race follows statistical laws of births, diseases, and deaths entirely different from those of the populations among which they live.*

Bibliographical Notices and Reviews.

The Diseases of the Ear: their Nature, Diagnosis, and Treatment. By JOSEPH TOYNBEE, F.R.S., &c., &c., &c. With one hundred engravings on wood. Philadelphia: Blanchard & Lea, 1860.

Dr. Toynbee is Aural Surgeon to St. Mary's Hospital, the Asylum for Idiots, and the Asylum for the Deaf and Dumb, and a Lecturer on Aural Surgery. In addition to his long having held these posts he has, for about twenty years, been a most industrious, and even a prolific contributor to the periodical literature of the subject. These things are mentioned as indicating the devotion of the author to the subject of which he treats.

In his preface he states that "it has been his aim to produce a practical treatise on the Diseases of the Ear, having for its foundation the anatomy, physiology, and pathology of the organ."

The general arrangement of the topics comprising the work seems to have been largely suggested by the leading anatomical elements of the organ of hearing. The subjects comprising it are as follows:

Introduction; The External Ear; The External Meatus; The Membrana Tympani; The Eustachian Tube; The Cavity of the Tympanum; The Mastoid Cells; The diseases of the nervous apparatus of the ear; Malignant diseases of the ear; On the Deaf and Dumb; Ear trumpets and their use.

The volume does not profess to give a complete description of

the structure and functions of the Ear: on the contrary, anatomy and physiology have only been entered upon when requisite for the elucidation of the pathology or treatment.

A most interesting feature consists of abundant illustrative cases. As specimens of the author's style, and of these illustrative cases, as well as on account of its great practical interest, we give the following on the subject of the rupture of the Membrana Tympani:

"*Pathological Observations.*—There are several modes in which the membrana tympani may be ruptured. The most common is an unexpected blow on the ear. It may also be ruptured by having a foreign body forced through it; by very loud sounds; by a fall; by violently blowing the nose; or by vomiting. Mr. Wilde relates a case in which the membrana tympani was ruptured by a gentleman, while bathing, thrusting his little finger into the meatus to dislodge some water.

"In cases of simple rupture, as from an unexpected blow on the ear, the margins of the orifice are usually in contact, scarcely any hemorrhage occurs, fibrin is effused, and the rent is speedily repaired. Where, however, the margins of the membrane are no longer in contact, and where the membrane has been much strained, very great irritation may ensue, requiring active anti-inflammatory measures. The most serious cases arise from the injury inflicted by the introduction of a foreign body, since the dermoid layer usually participates in the disease.

"In cases of simple rupture of the membrana tympani where inflammatory symptoms are still present, it is not desirable to do more than introduce a portion of cotton-wool into the meatus, to prevent loud sounds from acting injuriously upon the drum. Where the inflammation is great, leeches must be applied below the ear, and to the margin of the orifice of the meatus, and evaporating lotions used to the margin of the meatus itself. Should these remedies be unsuccessful, counter-irritation must be applied over the mastoid process.

"*Case* I. *Membrana tympani ruptured by an unexpected box on the ear.*—Master G., aged 14, was brought to me on June 2, 1852, on account of a peculiar sensation in the left ear whenever he blew his nose.

"*History.*—Five days ago, as he was sitting still, his tutor came quietly behind him, and suddenly and unexpectedly gave him a gentle box on the left ear, which produced instantaneous pain deep

in that organ. On using his pocket-handkerchief afterwards, he experienced a tingling and clicking in the ear, in which he has since also had pain at times, and from which occasionally a drop or two of blood have escaped. Inspection showed a small orifice at the lower part of the membrana tympani, about a line in diameter, with white borders. Air passed through on holding the nose and blowing gently. The watch was heard at the distance of a foot. As there was some slight pain, a leech was ordered to be applied below the ear every second night. This was continued for ten days, at the end of which time the pain had disappeared, the orifice had closed, and the hearing power had returned.

"*Case* II. *Rupture of the membrana tympani by a blow on the ear with a bolster.*—Master K., aged 14, was seen by me in consultation with Mr. Keal, on December 20, 1855, on account of an unpleasant sensation in the left ear.

"*History.*—A week ago he was engaged in a 'bolstering match' at school, during which he received a blow with a bolster on the left ear, which caused him pain. In the morning, on using his pocket-handkerchief, he found that air rushed out of the left ear, so that he was obliged to place his finger upon the ear while using the handkerchief. On examining the ear, a rent was observed in the membrana tympani, running from the lower extremity of the malleus downwards to the inferior parts of the membrane. The margins of the rent were in contact, but the air passed through with the slightest pressure from the fauces. The hearing power was natural. He was ordered a little evaporating lotion to apply on cotton to the orifice of the meatus. Twelve days afterwards, the margins of the orifice were observed to be swollen, and a small coagulum of blood attached to them: air passed into the tympanum from the fauces, but it did not escape through the aperture. When I saw this patient after another fortnight, the orifice was closed, but the cicatrix remained.

"*Case* III. *Membrana tympani ruptured by blowing the nose forcibly.*—Miss S. A. N., aged 16, consulted me on February 5, 1860, for pain and discharge from the right ear, accompanied by dulness of hearing in both ears. Her friends stated that she had for a long time the habit of blowing the nose very violently; and when doing so, four or five months ago, she felt as if something had given way in the right ear, and since that time has had discharge from it. Whenever the nose is blown, air rushes out of the right

ear with a loud squeaking sound. On examining the right ear, the membrana tympani was observed to be covered with mucus; and when the nose was blown, air was observed to issue from the tympanic cavity through a valvular fissure at the posterior part of the membrane. Watch heard at a distance of two inches. The treatment consisted in applying leeches to the margin of the meatus, in syringing out the ear with a weak solution of liquor plumbi in water, and in keeping up a slight discharge from the surface of the mastoid process. It was, however, only by slow degrees that the discharge diminished, and the orifice in the membrane closed. The membrana tympani did not regain its natural appearance, the part of it posterior to the malleus having fallen inwards towards the promontory.

"*Case* IV. *Rupture of the membrana tympani by a twig: injury to chorda tympani nerve.*—J. L., Esq., aged 19, consulted me on September 25, 1856. A week previously, while engaged in shooting, he was endeavoring to force his way through a hedge, and turning sharp round, with the view of picking up a bird, a twig passed into the right meatus, producing a sudden and severe pain at some distance in, followed immediately by deafness and a little bleeding, which has continued to a slight extent every night since. A buzzing noise in the ear supervened soon after the accident. The pain speedily subsided. On examining the right meatus, a little coagulated blood was found; on removing which by the syringe, the membrana tympani presented a rupture extending through the greater part of its diameter, a little posterior to, and parallel with, the handle of the malleus. The edges of the orifice were red and swollen. Air passed through it when the tympanum was inflated. Watch only heard on contact. A leech was applied to the orifice of the meatus; and a mildly astringent gargle applied gently by the syringe, twice a day. On October the 4th, the orifice had entirely healed; the buzzing noise had almost ceased; the hearing distance was half an inch. This patient returned to India, but intelligence has been received that the hearing has greatly improved.

For days after the laceration of the membrane in the above case, there was a feeling on the same side of the tongue as if something cold had been rubbed over it; the taste on that side also was impaired. The tongue, however, was quite natural in appearance

and movements, and its sensibility to touch was the same on both sides.

"*Case* V. *Rupture of the membrana tympani by the bursting of a gun.*—W. S., Esq., aged 28, consulted me in September, 1856. Six days ago was shooting, when the gun burst in his hand, producing instant deafness in the left ear, followed, two days ago, by a copious discharge of a watery character. Yesterday there was a slight aching pain, and for two or three days every pulsation of the vessels has been heard in the left ear. On *examination*, the left meatus was found to be red and to contain purulent discharge; the membrana tympani was also red, and presented an aperture at its upper and posterior part of an oval shape, about a line in length, and nearly a line in breadth, as if a portion of the membrane had been destroyed; the mucous membrane of the tympanum was red, and the hearing distance four inches. A leech was applied occasionally to the margin of the orifice of the meatus; the ear was kept clean by daily syringing; and afterwards a lotion, the nitrate of silver (gr. x. ad 3j) was applied on cotton-wool, by means of a probe, to the surface of the membrane. The aperture slowly filled up, as if by the deposit of fibrin on the margins, which, for some time, were thicker than the surrounding portion of the membrane; and, in the course of six weeks, it was entirely closed, and the hearing power perfectly restored.

"In this case the right membrana tympani was previously ruptured, and the bursting of the gun produced no effect upon the ear."

In further illustration of the author's style, and of the improvements for which the profession is indebted to him, we give in full the description of his method of exploring the Eustachian tube:

"*The exploration of the Eustachian tube.*—The method of doing this is so important to a thorough examination, as to require to be treated in detail. In a paper read before the Medico-Chirurgical Society in 1853, I pointed out a simple mode of ascertaining whether the Eustachian tube was pervious, and one which, as a general rule, is successful, without having recourse to the catheter. It has already been shown, that during the act of deglutition, with the mouth and nose closed, a small quantity of air is passed through the Eustachian tubes into the tympanic cavities; a process that is attended with a sensation of fullness in the ears. The entrance of air into the tympanum can be distinctly heard by means of an elastic tube about eighteen inches long, each end of which is tipped

with ivory or ebony; an instrument which I have named the Otoscope. One end of it is to be inserted into the ear of the patient, and the other into that of the medical man, who must take care that no portion of the tube touches any neighboring body. When the patient swallows a little saliva, the mouth and nose being closed, if the Eustachian tube be pervious, at the moment that he feels a sensation of fullness in the ear, the surgeon will hear most distinctly a faint crackling sound, produced apparently by a slight movement of the membrana tympani. This crackling sound is that most usually heard; but in some instances where the mucous membrane of the tympanum is thick, a gentle flapping sound will be detected in its place. If in a case of suspected obstruction of the Eustachian tube, the otoscope fail to reveal any sound during the act of deglutition; if no sound be heard when the patient makes a forcible attempt at expiration with mouth and nose tightly closed; and if the history of the case, the symptoms and appearances, agree with those already laid down as appertaining to obstruction of the Eustachian tube, I think the surgeon is justified in affirming that the tube is obstructed, and has no need to resort to the use of the Eustachian catheter. Doubtless, in many cases, a person is unable to force air into the tympanum, although the pervious condition of the Eustachian tube is shown by the test of the otoscope, and this may depend upon a peculiar arrangement of the lips of the tube which causes them to be pressed together by the compressed air. There are other cases also where the tube may be proved to be pervious by the patient forcing air into it during an attempt at expiration, although the act of deglutition with closed nostrils does not call forth any sound appreciable by the otoscope; but it is rare indeed for a pervious tube to resist *both* of these tests. I have, however, met with such cases; but, as their history, appearances, and symptoms have concurred in showing that no obstruction of the tube existed, it has not appeared necessary to introduce the catheter. In certain cases the membrana tympani may be seen to move during an attempt at expiration, even though no sound could be heard; the patient, therefore, should always be asked whether he perceives any sensation in the ears during the above named processes.

"Is the Eustachian catheter then useless as a means of diagnosis? Notwithstanding its frequent use by surgeons in Germany and in France, I am disposed to think so. By paying attention to the

points just laid down, it is my opinion that a case of obstruction of the Eustachian tube can always be diagnosed without the aid of the catheter. Respecting its use as a remedial agent, I shall speak hereafter.

"That the cause of the obstruction of the Eustachian tube at its faucial orifice is the thickening of the mucous membrane, is proved by actual dissection, by the coexistent thickening of the mucous membrane in other parts of the fauces, and by the results of the remedial measures adopted for its relief. An opinion formerly obtained a certain degree of credence in the medical profession, that enlarged tonsils frequently press upon and close the Eustachian tubes. There can be no doubt this opinion is erroneous. To convince himself that it is so, the surgeon has only to make an examination of the relative position of the tonsil and of the trumpet-shaped extremity of the tube; when he will find the tonsil situated from an inch and a quarter to an inch and a half below the tube, and placed between the palato-glossus and palato-pharyngeus muscles, the latter muscle entirely separating the tonsil from the tube: he will also find the Eustachian tube close to the base of the skull, against the basilar process of the occipital bone, and surrounded by the tensor and levator palati muscles, the function of which is, as already shown, to open the tube. Repeated examinations have convinced me that even should the tonsil enlarge to its greatest possible known extent, it never reaches the Eustachian tube; for, together with the enlargement of the tonsils, the palato-pharyngeus muscle also hypertrophies, and effectually separates the two organs. Nay, further, in the cases seen by me, where the tonsils have been the largest, there has been no deafness; a fact which must also have been observed by other medical men. Often, in a case of obstructed Eustachian tube in one ear, the tonsil has been comparatively small on the deaf side; while on the opposite side, where there has been no deafness, the tonsil has been large. There is no doubt that obstruction from hypertrophy of the mucous membrane of the faucial orifice of the Eustachian tube may coexist with enlarged tonsils; but the mere coexistence of two affections must not be confounded with cause and effect."

Having given these rather copious quotations, but little remains to be done. The general arrangement of the work is thoroughly systematic. The special topics are discussed in a style at once natural, clear, candid, and simple. The author's original investi-

gations have been numerous, and without the least exhibition of pedantry, are made to constitute the great characteristic of the book. It is thorough, yet not tedious in its details. It is comprehensive in its scope, giving it completeness, within a moderate compass. It is copiously illustrated with one hundred well executed wood cuts, most of which are new. In fact, the mechanical execution is all that the most fastidious could desire, and the book, in every respect, one of very special merit.

H.

Editorial and Miscellaneous.

Notes on a Trip East.

In our July No. we commenced sketching, in a very brief way, what we saw of men and things on a recent trip to the Eastern cities; and as we did not then exhaust our "note book" we shall draw upon it again for a few other matters that may be of interest to the medical reader.

During our brief stay in Philadelphia we had but a short time for interviews with medical men, and notices of the medical institutions, with which the city abounds. We saw or heard but little as a consequence worth relating. The old class of professors, the men who gave to Philadelphia its former renown, we noticed has almost entirely disappeared. Dr. Samuel Jackson, perhaps the oldest teacher of medicine now in the United States, is still, however, on duty; and so is Dr. C. D. Meigs. The latter has retired from practice, and taken up his residence some twenty miles from the city. We found Dr. Dunglison at his desk, as usual. He remarked to us that he had not written a book for some eighteen years, his time having been mostly employed during this period in revising what he had previously written. We understood, however, before leaving the city, that he now has in contemplation a work on Physiology for the use of Academies and Common Schools. Dr. Dunglison, although advanced in years, still has the appearance of possessing a large amount of vitality, and works now, per-

haps, as much as ever. A very fine colloquist, he seems to enjoy, in an eminent degree, conversation on medical subjects; nor have we met any medical gentleman in the country who was more at home on all subjects than Dr. Dunglison. He is likely the best instance of a Peripatetic Encyclopœdia that we have. Strange as it may seem, he practices none, nor has he for the last twenty years. All his time has been taken up with his books. He has always wielded a very ready and a very accurate pen, and it is on these accounts, that his numerous works have had currency.

We made our respects, while in the city, also to our Western friend, Dr. S. D. Gross. Our visit was just after the appearance of his "*System of Surgery*," a work of near two thousand pages, and he seemed to be in that pleasant mood which, it is said, an author experiences after "laying out his strength." He was too, no doubt, watching with some interest the first verdict of the press in regard to his book. By this time likely the opinions are in, in sufficient number to enable him to know to what extent he is appreciated. The work has been barely *noticed*, not reviewed, in our Journal, owing to the want of time necessary to look through its contents. As soon, however, as the weather gets a little cooler, and the nights longer, we will undertake the task of cutting its leaves, and taking a tour through it, from cover to cover. In the mean time, we bespeak for it, "on general principles," the earnest attention of those who wish to furnish their libraries with works of the kind.

We visited the Museums of the old University, and also of Jefferson Medical College. Both contain some very clever facilities for instruction, and a few things interesting to the Naturalist. And, by the way, both of these schools, whether the facts are generally known or not, have succeeded at last, we are told, in getting up right down respectable classes, classes that would pass muster even out here—most any where.

With Dr. J. Pancoast we saw something of the service at Pennsylvania Hospital. The only case of interest was that of a male adult, upon whom amputation at the *hip-joint* had been performed for supposed *fungus hæmatodes* at the knee. We saw the patient on the fourth day after the operation, and he appeared to be doing well. The hemorrhage was controlled by compressing the abdominal aorta. Dr. Pancoast, who operated, remarked, that this was the first operation of the kind ever performed in Philadelphia

The operation was performed, however, first in this country by Dr. Mott, on the 7th of October, 1824, on a boy. Against the 20th of November succeeding, the stump was healed and the boy soon afterwards grew fat.

Morand is the earliest practitioner who made this operation a subject of study, and in the year 1739 two essays were communicated to the *Royal Academy of Surgery*, at Paris, on the practicability of the operation. In the year 1756 the Academy offered a prize for the class of cases in which the operation is advisable and the best method of performing it. Pot witnessed the operation and gave his testimony against it. The French seem to have first suggested the operation, but it is a singular fact that it was performed for the first time by an English Surgeon, H. Thomson, Surgeon to London Hospital. The operation has been repeated by Kerr, Larrey, Baffos, Langenbeck, Syme, Samuel Cooper, Sir Astley Cooper. The success of the operation has been variously stated. Ferguson thought that one patient out of every three on whom it has been performed, has been saved. But Sands Cox furnishes the simple evidence of numerical facts, by which it is seen that out of 84 cases in which amputation at the *hip-joint* had been performed, 26 were successful and 58 unsuccessful; or out of every 10 operated upon, 7 died and 3 recovered.

All who are able to appreciate the extensive mutilation involved in this operation, the removal of almost one-fourth of the body, and the consequent shock that the organism must sustain, can see at once the propriety of the French Academy of Surgery in offering a prize for the best essay on the question—"Should the operation ever be performed as the only resource for saving the patient's life." Some years ago we looked through the literature of this question, and our recollection is that the operation is justifiable in extensive injury of the soft parts about the hip-joint in connection with bad fractures of the upper third of the femur, either from gunshot wounds or other causes. But in exostosis, caries, or necrosis of the head of the femur, there is apt also to be a similar trouble at the acetabulum, extending often over the innominatum. Such being the case the operation would be useless. But more positively does it appear to be contra-indicated where there is a scrofulous or cancerous cachexia. If, therefore, Dr. Pancoast's case was what he supposed it to be, fungus hœmatodes, the operation

XUM

must be looked upon as simply experimental, and in this light it was, perhaps, justifiable. We hope to hear that the patient has recovered.

PHILADELPHIA ACADEMY OF NATURAL SCIENCES.—Having been a little exercised for a few years with the infant science of Ethnology, we visited the academy for the purpose of seeing the collection of skulls made by the late Dr. S. G. Morton. This collection now contains 1,100 specimens, representing more than 170 different tribes and races of the human family. We have now no space or time for any remarks on this valuable cabinet. Full accounts of it may be seen in the writings of Dr. S. G. Morton himself, and in those of J. Aitken Meigs, Librarian of the Academy. A word or two, however, on the crania of several of the anthropoid apes which are found in the collection.

Secular papers of late have contained accounts of the "wild man" of Africa, lately brought to light, and many fabulous stories have been put into circulation in regard to his size, strength, habits, location, etc. These stories relate to two species of ape, the Gorilla and Chimpanzee, not new to naturalists, but in regard to which much interest has lately been felt because of their alledged close relation to the lowest types of humanity. From seeing only a cranium or two of the Chimpanzee, and but casts of the Gorilla skull and lower jaw, we have come to the conclusion that the popular notion, that the Gorilla is the nearest approach to man, is incorrect. This animal is evidently larger than the Chimpanzee, reaching, when full grown, likely seven feet in hight, and possessing great agility and muscular power. The cranial cavity is less though than that of the Chimpanzee, and more posterior to the face; the facial angle is less; the area of the cranium to that of the face also less. The teeth of the Gorilla are very large, double the size of the teeth of an adult man; and, owing to the great development, especially in length, of the canines, the countenance has imparted to it a very animal-like aspect. I believe it is Owen who, in a paper on the *Troglodytes Gorilla* from the Gabboon river, Africa, states that he regards this animal as the most anthropoid of the known brutes. The weight of authority is now, however, against Owen, and it is believed that his opinion was founded on observations of the crania of young Gorillas, that, strange as it may seem, have more points of resemblance to man about the head and face, than the adult ones.

No one, however, who inspects the data that was before us, at the Academy, in Philadelphia, and at the Smithsonian Institution, can fail in being impressed with the resemblance of these higher types of the ape, to the lowest forms of humanity. On this subject Agassiz remarks: "The Chimpanzee and Gorilla do not differ more from each other than the Mandingo and Guinea negro; they together do not differ more from the Orang than the Malay or white man differs from the negro." It is also a singular geographical coincidence, that around the Bight of Benin we have dwelling, not very far apart, the Gorilla, the Chimpanzee, and the lowest forms of the negro type.

THE SMITHSONIAN INSTITUTION.—Those who have received the reports of this Institution are fully aware of the circumstances connected with its origin, and known something of its progress in carrying out the objects of its founder, James Smithson.

The bequest, in the language of the testator, was to found at Washington an establishment, under the name of the Smithsonian Institution, for the *increase* and *diffusion* of knowledge among men. The whole amount of money received from the bequest was $515,169. From this fund a building has been erected, the corner-stone of which was laid in 1847 in the presence of President Polk and his Cabinet. The material employed in the construction is a lilac gray variety of free-stone, found in the new red stone formation on the Potomac river. The style of the architecture is that known as the Norman, which prevailed during the last half of the twelfth century. The financial affairs of the Institution have been ably managed. Besides the cost of the building, $300,000, and about $100,000 expended in books, apparatus, etc., the principal of the bequest has been increased $125,000. This reflects, in these corrupt times, great credit on the "Board of Regents."

On the *interest*, then, of some $635,000, this Institution is now kept in motion for the purpose of carrying out the intentions of its founder. After defraying the expenses of officers, and keeping the buildings and grounds in repair, very considerable sums are annually expended in the purchase and publication of scientific works, in the collection of specimens in Natural History, and in the encouragement of original research in various departments of science. Mr. Smithson, in his bequest, states that he wished to *increase* and *diffuse* useful knowledge, and, as a consequence, Prof. Joseph Henry, Secretary, and Spencer F. Baird, Assistant Secretary, having

mostly, as we suppose, the scientific charge of the Institution, have regarded, and we think very properly too, the first object, *the increase of knowledge*, as of primary importance, and hence no little has already been accomplished in this direction. Every investigation that promises a new truth, it matters not how abstract, takes precedence in the way of patronage. To medical men it may be interesting to know that every thing new pertaining to Vegetable or Animal Physiology, or to Microscopy, or to any department of Natural History, is regarded as being in the line of Mr. Smithson's objects, and the Institution is very likely to aid in the publication of such researches.

Already the reports contain contributions from physicians, and we can see no reason why these in the future may not be increased.

We have no space for notices of the Library, Museum, Gallery of Art, Meteorological and Magnetic Observatory. The Institution should be visited to form an idea of what it is.

A visit to the Museum, which is just now about 100 years the junior of the British Museum, the largest in the world, will pay any one well, and serve, to a very considerable extent, the purposes of travel. Really, more may be seen here in a few hours than would likely be in making a circuit of the globe. The Zoologist, in walking through it for the first time, feels himself at once surrounded with the animals of every clime, land and sea.

The "Board of Regents" have allowed the owners of many valuable works of art the right of deposit in the building. Among these are portraits from life of forty-three different tribes of Indians painted by Stanley. These, taken with the government collection, which now numbers about one hundred and fifty portraits, make a very fine gallery, and will do much, indeed, all that can be done, to preserve for posterity something of the appearance of the autochthon race.

We visited this gallery after having just seen the Japanese, and were impressed with the great difference, among other things, in the expression of countenance of these two varieties of the yellow race. Earnestness, severity and ferocity predominate in the countenance of the American Indian; while that of the Japanese is bland, mild, good-humored.

The Library now contains 25,000 volumes; also the transactions of a great number of learned societies throughout the world;

and a collection of engravings that has in it some of the best works of nearly every engraver of much celebrity.

This Institution cannot fail to exert a very valuable influence on scientific researches in this country.

American Medical Gazette, (N. Y.)—Just as we are going to press the Gazette comes along with a rejoinder to our reply to its "*Hyperbolical Carricature;*" and we regret that we have time, at present, for but a word or two.

We notice, among other things, that the editor of the Gazette has allowed of a slight suspension of the natural suavity! and sweetness! of his temper. He seems, at the distance of some five hundred miles, as though he had lately suffered a little from an attack of frustration, a calamity that we should regret very much to know we have had any hand in bringing about.

The editor of the Gazette makes no attempt in the effort before us to impugn a single position we have taken, touching the scientific questions at issue; or in relation to the progress of knowledge in this country. Indisposed during "dog days" to such labor, he seems to conclude to risk what there is left of him in the controversy between us, in trying to make it appear that we have misrepresented him *grossly*. And in doing this he bases his charge on an alleged perversion of one of *his* answers to our question: "What have we discovered in Physiology?"

That the reader may judge for himself we will give the Gazette's answer and then our own.

The question we propounded was, "What have we discovered in Physiology?"

The Gazette's answer was, "*Much every way.* See Dunglison, Dowler, Dalton, Campbell, Isaacs, Draper."

We represented the Gazette as saying, "Much—much every way—no time for specifications."

We now discover that in rendering what the Gazette said on the question pertaining to physiology, we inadvertently gave also his answer to the question on Practical Medicine. "What have we discovered in the treatment of disease?" was our question on that subject.

Here is his answer: "Innumerable improvements have been made by American physicians in every department of the healing

art, conceded to be such by all Europe, and adopted in the most enlightened transatlantic nations. WE HAVE NO ROOM FOR ENUMERATION," etc.

What, now, is the difference in import between the sentences? "No time for specification," and "No room for enumeration."

We can see none. And we submit to the reader, whether now we have not treated the editor of the Gazette fairly—given the substance fully of what he said. It is true that we gave his answers to *two* questions instead of to one, for at the time we were speaking of *his mode* of answering questions. But does this misrepresent him? He used the language that we have attributed to him, and in answer to our questions.

As we shall not, from what is said, have the pleasure soon again of breaking a lance with the editor of the Gazette, we will just remind him before parting, that he has incidentally, in his controversy with us, got into a little trouble with a sophomore at our elbow, who criticises his Latin. Will he fix up this before parting, or is he completely now *hors de combat?*

HOMŒOPATHY—OHIO PENITENTIARY.—Our course in regard to all irregular systems has mostly been characterized by silence. People in medicine, like in every thing else, have an uncontrollable curiosity. The educated, as well as the uneducated, wish to see for themselves every thing that is to be seen, and try every thing that is to be tried. And the history of things goes to show, that ostensible absurdity, probable fraud, or dangerous appearances, only have the effect of strengthening the desire for experimental knowledge. As a consequence the most unreasonable and inconsistent doctrines, and the most unworthy and uninformed men, have always a warrant, at the hands of the people that nothing shall go untried.

Such being the constitution of the people we have found always, what, to us, seemed more useful employment, than the attempt to either stop, or cut short the course of any folly with reference to medicine. But when, as in the case before us, it has been demonstrated theoretically and practically that the system is false, we are, to say the very least, surprised that it should not at once be consigned to oblivion, and the supporters of it, if not entirely de-

mented, advised to turn their attention to something of service to themselves and community.

We have had in this city a *Homœopathist* appointed to take charge of a medical service in one of our public institutions, the Ohio Penitentiary. This action on the part of the "Board of Directors" struck many intelligent and right-minded citizens all over the State as very strange. Were the Directors aware that by this appointment they were setting themselves up as judges of what is right in medicine? Were they aware that, if the appointee be faithful and honest in the practice of his system, the "*convicts*" will receive no medicine, it matters not with what disease they may become affected? Did they know that homœopathy has been tried in the public institutions of Europe, and universally dismissed as being equivalent to a mere *negation* of medicines? Do they know that those who have been engaged in practising the system, in the various cities of the United States, have been compelled, from want of success, to thicken it up with doses of the proper quantity?

Labors of Love.—It is perhaps not generally known that those engaged in the investigations of Nature, work solely under the influence of love. At every stage of inquiry they extract pleasure, often of the intensity connected with the discovery of something *new;* and this is their reward. The Naturalist will freeze or roast himself in foreign climes, submit to deprivations of food and clothing, will climb mountains, traverse dangerous forests, wade streams, and breathe deadly poisons, in the pursuit of his favorite object, and then come home with his specimens and either beg from rich merchants and bankers the means of publishing, or else bankrupt himself in doing it. Wilson, the American *Ornithologist,* states, in a letter to Michaux, that he sacrificed every thing to publish his work. Bowditch, while meditating on the publication of his Commentaries on *La Place,* assembled his family together and told them, that, in order to carry out his designs, he would have to sacrifice one-third of his property. Several works, now in course of publication, on the different branches of Zoology, will leave their authors, it is said, losers by an aggregate of $15,000. The illustrated works of naturalists, the only one's worth much,

find few purchasers—and it is said, in an address touching this subject, that the number of copies published seldom exceed two hundred and fifty.

Ohio Medical College—Reorganization.—This old school, founded by the late Dr. Drake, has just been reorganized in both Trustees and Faculty. The Faculty at present consists of the following gentlemen:

M. B. Wright, M.D., Professor of Obstetrics and Diseases of Women and Children.

George C. Blackman, M.D., Professor of Surgery and Clinical Surgery.

James Graham, M.D., Professor of Practice of Medicine and Clinical Medicine.

W. W. Dawson, M.D., Professor of Anatomy.

James F. Hibberd, M.D., Professor of Physiology and General Pathology.

J. C. Reeve, M.D., Professor of Materia Medica and Therapeutics.

Charles O'Leary, M.D., Professor of Chemistry and Toxicology.

Books and Monographs.—We have since our last issue received a number of books and monographs which will receive attention in due time. Among these we may specify—

A Successful Case of Ovariotomy, by Wm. H. Byford of Illinois, Professor of Obstetrics in Lind University.

Inflammatory Affections of the Female Breasts, by same Author.

O'Reiley on the *Placenta and Nervous System.*

Physician's Visiting List, 1861, by Lindsey & Blakiston.

Thompson on *Fever.*

Walsh on *Diseases of the Lungs.*

Winslow on the *Brain and Mind.* (Blanchard & Lea.)

Todd's Clinical Lectures on *Certain Acute Diseases.* (Blanchard & Lea.)

Hallucinations, by A. Brierre De Boismont, M.D.

MEMPHIS MEDICAL COLLEGE.—The Annual announcement of this Institution for 1860–61 is before us. Among the Faculty we recognize the name of our old friend, L. P. Yandell. He has the chair of *The Principles* and *Practice of Medicine*, and is also *Dean*. With the other members of the Faculty our acquaintance is but slight. The success of the school, however, has a very certain guaranty in the reputation and industry of Professor Yandell.

UNIVERSITY OF BUFFALO.—The medical department of this institution has lately sustained a loss in the resignation of Prof. Hamilton, who occupied the chair of Surgery. We see, however, that our old colleague, E. M. Moore, M.D., has been selected to take the chair vacated by Prof. H. A better appointment than this could not easily have been made.

ENDOWMENT OF MEDICAL COLLEGES, SOUTH.—We notice that the Legislatures of several of the Southern States, have lately made donations to medical colleges, either for the purpose of getting up new ones, or for placing those already in existence upon a more permanent footing. The Virginia Medical College, at Richmond has come in for a part of the good fortune, by receiving $30,000. The Alabama College, at Mobile, has been also highly favored by the State. These are examples worthy of imitation, even by us *Christians!* here in the North.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.—This valuable "Exchange" we no longer have the pleasure of seeing on our table. What has become of it?

The bore for water now being made in this city, is said to be much the deepest in the world. It has attained the depth of 2,676 feet, and is progressing at the rate of 4 feet daily.

The last 130 feet has been in sand stone. The workmen are calculating, with some degree of confidence, that they will find water on passing through this stratum. H.

Death from the use of Chloroform.—We learn from the Cincinnati Commercial, that on Sunday, the 26th ult., Peter Thoma, a German, aged 29 years, died from the inhalation of chloroform, which was being given by Dr. W. J. A. Krause and two other physicians, not named, preparatory to the operation for artificial pupil. It is admitted that it was intended to produce a profound effect, as would be necessary in such circumstances. It is said to have been administered with the ordinary precautions.

This is the third case in Ohio, in which death from chloroform has become matter of general notoriety. The first was in Cincinnati, the second in Trumbull county. We have heard from private sources that another occurred in Delaware county, a couple of years since. We trust it is not necessary to remind physicians of the duty of giving publicity to everything bearing upon this subject. H.

High Operation for Stone.—The August number of the American Medical Gazette, contains the report of ten cases in which the supra-pubic operation for stone was performed. The cases are reported by Dr. James R. Wood, and were performed by the surgeons and with the results named as follows:

Prof. Willard Parker,	4	operations,	with	3	recoveries and	1	death.
Dr. Krackowitzer,	3	"	"	0	"	3	"
Dr. Noeggerath,	1	"	"	1	"	0	"
Dr. Hewitt,	1	"	"	1	"	0	"
Dr. J. R. Wood,	1	"	"	0	"	1	"
Making	10	operations,	with	5	recoveries, and	5	deaths.

In one of Prof. Parker's cases, although at the end of three months the patient was quite comfortable, she had a slight opening above the pubis, from which, at times, pus escaped.

These results are not such as to encourage the repetition of the operation, where it can be avoided. H.

We hear of the prevalence of Diptheria, in Madison county, also in Lake county, and other localities. We will be under especial obligations to our friends who are practicing among it, if they will forward us the results of their observations for publication. H.

Editorial Correspondence.

A professional friend who was permitted to read the following correspondence, requested the publication of it. As our reply contains cautions which we feel frequently obliged to give, in our private correspondence with physicians, on this subject, we have concluded, as well as on account of the very interesting character of Dr. Ferris' case, to give it an insertion.

UPPER SANDUSKY, *August* 27, 1860.

PROF. HAMILTON—*Dear Sir:* There is a case of what I take to be ovarian dropsy in this place, attended with a peculiarity that I never saw before, and find no account of in the books. I will give you a history of the case as well as I can, and should be glad to have your opinion in relation to it.

The patient is a lady about 55 years of age, is married, and has borne a number of children. Of previous good health. In September last, she discovered a bunch in her left side, in the region of the ovary, since which time it has gradually increased in size until it now fills the entire cavity of the abdomen, and must contain near two gallons of fluid. The boundaries of the tumor in its first stages were distinct and easily defined. The peculiarity of which I speak consists in a vaginal tumor or cyst, about four inches in its largest diameter, and three inches transversely. The cyst is fluctuating, and evidently contains fluid. It is situated in the inferior and posterior portion of the vagina, having an attachment about one inch broad and extending from the lower extremity of the vagina about two and a-half inches up the same. The upper portion of the vagina and os uteri appear to be healthy and in their natural position. The external cavity of the tumor is entirely composed of the mucous membrane of the vagina. The tumor is free from soreness and pain. It commenced at the same time of the ovarian tumor and has grown with it. Her general health has suffered but little until recently. There has been no pain or soreness. The patient can rest well in bed in any position. The os and cervix uteri are healthy.

This is the history of the case as I have learned it from her. I never saw it until a few days since, when she came here from Bucyrus. She has been subject to medical treatment without any benefit.

If you will answer the following questions, you will much oblige me:

1. From my history of the case what, in your opinion, is the nature of the tumor in the abdomen?

2. What is the nature of the vaginal tumor, is it a simple cyst containing fluid, or is it a fold of the peritoneum passed down between the rectum and vagina protruding into the vagina?

3. Is it a favorable case for an operation?

4. Before proceeding to operate for the removal of the ovarian cyst would it be expedient to tap the vaginal tumor?

By giving me an answer to these questions, at your earliest convenience, you will much oblige your humble servant,

O. FERRIS, M.D.

COLUMBUS, *August* 25, 1860.

Dear Sir: I suppose from the history of your patient given, that her disease is ovarian. Yet in regard to this matter it is well enough to be guarded. The point of origin of a uterine tumor, the direction and mode of development, &c., are frequently not to be distinguished from that of ovarian disease. In fact, in a recent case where the history seemed unequivocally to point to the ovary as the point of origin of a large abdominal tumor present, the symptoms indicated, and finally a post mortem demonstrated, that the tumor was nothing more nor less than an enlarged liver.

I will just say that, with the aid afforded by your letter, I should be inclined to one or the other of two suppositions:

1. A multilocular ovarian cyst, one part of which has developed in the recto-vaginal space, the other in the abdominal cavity, or

2. A large uterine tumor, with effusion in the abdominal cavity, and a smaller tumor in the recto-vaginal space with a long pedunculated attachment.

As to fluctuation, and the indications afforded by it, it is not safe to be too confident. In two of my cases in which fluctuation was exceedingly distinct, there might be serious question, after removal, as to whether the tumors should be called solid or cystic. The great bulk of them consisted of gelatinous substance, imperfectly if at all organized, exceedingly elastic, and consequently presenting fluctuation in a marked degree.

A large number of points, additional to those given in your letter, would have to be before me before I could intelligibly decide

the question of operation, or the propriety of tapping. Is the uterus movable? What is the length of its cavity and the direction of its axis? Was the abdominal tumor movable during its growth? Is it yet movable? Is the abdominal tumor lobulated or regular? Has the patient at any time had peritonitis? Has she inherited a cancerous proclivity? What are the facts in regard to the degree, direction, situation, &c., of fluctuation? Aside from the tumor, is there evidence of the presence of fluid in the peritoneal cavity? Are the liver and spleen probably healthy? These are the leading things to be settled preparatory to operation.

Finally, as an individual I should not advise an operation in this or any other case, till I had, as clearly as possible, and beyond a reasonable doubt, made out the diagnosis of *cystic ovarian disease*. If I could make out, with a reasonable degree of certainty, that it was of the proliferous kind, I should not hesitate to advise and undertake the operation, unless there were present some special contra-indication. But such fearful procedures as are included in ovariotomy ought not to be undertaken, except in the absence of all reasonable doubts in regard to diagnosis. The necessity of caution is sufficiently impressed by the numerous mistakes, in able and honest hands, which have been made. You are, no doubt, familiar with the fact that of the fifty-eight operations which have been undertaken in our own State, mainly by surgeons of undoubted ability, more than one-twelfth of the whole were predicated upon mistaken diagnoses. Respectfully,

J. W. HAMILTON.

Comparative Pathology;—The Massachusetts Epizootic.

[To the Editor of the American Medical Times]

SIR:—The great value and importance of comparative physiology, in elucidating the physiology of man, is, at the present day, universally admitted. Without experiments on the lower animals, Harvey could never have demonstrated the circulation of the blood as now understood; and Dr. Marshall Hall would never have even suspected the reflex or diastaltic function of the spinal cord. For it was while experimenting for an entirely different purpose upon the proteus, that the latter made the most important physiological discovery of the present century.

But comparative pathology is almost entirely ignored by medical men. And yet there is no reason, *a priori*, why the pathology of the lower animals should not throw as much light on human pathology, as has its alli department of science, above mentioned, upon human physiology. On the contrary, there is ample reason for the belief that the same amount of investigation would yield results to the medical practitioner even more important and valuable. For a science of comparative therapeutics may be formed upon that of comparative pathology as its basis; and then the former may be applied in illustration, and to the extension of human therapeutics. Not that a particular remedial agent will of course have the same effect upon the human organism which it has been proved experimentally to produce in a lower animal. Aconite is eaten with impunity by the horse, hemlock, by the goat, belladona by the rabbit, and nux vomica by a species of buzzard; but all these are poisons, except in minute quantity, to man. On the other hand, parsley is a poison to the parrot, and food to man. Nor, if we know the proportionate doses of a particular medicinal agent for man, and a particular species of the lower animals, can we infer the proportions required of another remedy. The horse requires ten to twelve times as much aloes for a dose as a man; but the latter can not tolerate one-tenth of the amount of arsenic which is appropriate to a horse. Still, comparative therapeutical experiments are always suggestive; and sometimes lead us, as it were, by a thread, to use one of Sydenham's expressions, to some important practical fact or principle in human therapeutics. For instance, the effects of arsenic in improving the external appearance of horses, suggests the idea that it may be found a valuable remedy in certain diseases of the human skin; and experience demonstrates this to be the fact.

Thus the most reliable method of advancing the science of human therapeutics, next to direct experiment on man, is therapeutical experimentation on the lower animals in known pathological conditions. It is in fact in this way that we have acquired most of our knowledge of the antidotes to the various poisons; and even the discovery of vaccination, by Jenner, was the result of his investigation of a pathological condition of a lower animal.

We will not, however, prolong our remarks on the importance to medical men of comparative pathology. But there is another point of view in which this subject assumes the gravest importance to the community and to the commonwealth. Some of the diseases of the lower animals are epidemic in their nature, and cause a great

pecuniary loss to the owners of the animals infected by them; as is the case with the glanders in horses, the rot in sheep, and murrain in cattle. Nor is this all. In case of the ox and the sheep, the most fearful results to health or life may ensue to those who eat the flesh of animals contaminated by the disease. And in view of both the loss of human health and life, which an epidemic disease affecting our domestic animals may produce, it becomes the obvious duty of the State at once to adopt measures for its extinction.

These remarks have been suggested by the fact that a fearful epizootic is now destroying the cattle in certain portions of the State of Massachusetts, and has already extended to some of the adjoining States. Not long after its first appearance, and about three months since (it having originated from some imported stock,) the Massachusetts Legislature appointed a "Board of Commissioners" to provide for its extirpation; that Legislature has recently been again convened, expressly "to consider what further action in this emergency is required."

The importance of this subject to the community at large, in a pecuniary point of view, may be inferred from a few facts in the history of other similar epidemics. During that which affected the neat stock in England from 1744 to 1754–5, not less than 40,000 head of cattle perished in Nottinghamshire alone, and 30,000 in Cheshire, in six months. Parliament enacted a special ordinance authorizing the killing of all infected animals, and during the third year of the epizootic £135,000 was paid by Government for 80,000 head of cattle killed in accordance with that act. During that year also about twice as many died of the disease; making a total loss of 240,000 head. During an epizootic in Holland, in 1857, over 40,000 head of cattle were slaughtered, or died, in only 43 villages. Appaling facts are these to the farmers of New England in the present emergency!

But the danger is by no means confined to New England. A single infected animal transferred to a distant State may spread the disease in all directions, and to any distance. Every cattle-raising State is therefore interested in this subject; and Ohio, Kentucky, Illinois, and, coming eastward, Pennsylvania, New York, and New Jersey, as well as all the New England States, have sent commissioners to Massachusetts to investigate the disease.

Of course everything depends on the *competency of the commissioners.* And while any body can kill an infected animal, and so far prevent the spread of the disease, only a thoroughly educated

pathologist, whether he be a medical or a veterinary practitioner, is competent to determine the causes of the disease, the laws of its propagation, and the best method of cure. It has been called a pleuro-pneumonia; but the local inflammation is, in all probability, not the essential element of the disease. All epidemic and epizootic diseases are probably due to some agency acting primarily upon the blood. E. R. P.

QUACKERY.—"An arrest was made on Saturday last of Dr. J. E. E. Ealing, recently arrived in this city and advertising for practice as an aural surgeon, under a provision in the act of incorporation of the Medical Society of the District of Columbia, which disallows persons from abroad to practice medicine or surgery in the District unless such persons have received a diploma to that effect from some recognized school here or elsewhere. The case was brought before Justice Meyer, on Eighth Street. One of the witnesses in the case was Dr. J. F. May, who identified Dr. Ealing, alias Elliott, as a person who operated last winter in Nashville, Tenn., as a corn-cutter and extirpator of bunions and excrescences from the feet; that was the whole height and extent of his pretensions in Nashville.

"During the short time he has been in Washington great numbers of persons of every condition in life had applied to him, and large sums of money—in one case five hundred dollars—had been paid him for pretended cures. In answer to a question put directly to the defendant by Dr. May, as to whether he was not the same person who operated as a corn extractor, etc., Dr. Ealing for some time hesitated, but at length answered, "Perhaps I am." Mr. James Henderson, who travels with Dr. Ealing as his agent, was also examined by the Justice, and gave confirmatory testimony as to Ealing's traveling with an alias, and his receipt of large sums of money for his so-called cures of deafness. It appears, also, that when in Nashville Dr. Ealing, alias Elliott, publicly claimed "to belong to the surgical staff of the medical department" of Queen Victoria, and signed himself "Operating Surgeon to the Queen of Great Britain." The Justice held Dr. Ealing to bail in the sum of $1,000 for a second appearance, for which he afterward took $300 cash in hand, and kept a watch upon his movements, so as

to prevent his escape. But the Justice does not seem to have been very successful, as the rooms at the National held by the Doctor were vacated yesterday afternoon and their occupant could not be found, though much in request by numerous indignant patients who had paid 'in advance.'"—*Nat. Int.*

Erectile Tumors.—Dr. Daniel Brainard, published, in the Chicago Medical Journal for June, an extended essay on the pathology and treatment of erectile tumors. He sums up the relative merits of the different methods of treatment as follows:

1. Excision should be performed in every case where the size and situation of the tumor will admit of its being performed. This is almost as much a rule in these cases as in cancer. The exceptions are the slight cases which may be trusted without treatment until they increase in size.

2. When excision would cause too great a loss of substance, danger from hemorrhage, or when, from any cause, excision is objected to, strangulation is to be preferred next in order and whether effected with ligature alone, or with needles or other means, it should always, if possible, embrace the whole diseased structure.

3. In limited superficial naevi and erectile tumors, particularly if placed over bony surfaces, compression will often diminish, if not cure, the disease.

4. In deep-seated tumors, particularly aneurisms by anastomosis, cauterization with the hot needles is an extremely efficient remedy, either by itself or in connection with other means.

5. Setons or metallic needles may be used in the venous forms of the disease. They are more effectual when placed, to some extent, in sound tissue.

6. Ligature of the principal artery leading to the part, is adapted to the variety called aneurism by anastomosis, the accidental thrilling variety, and particularly to that variety situated in the orbit of the eye. I believe, however, that it is more dangerous and less necessary than is generally supposed.

7. Vesicants, escharotics and caustics, are adapted to complete a cure, when a small portion of tissue remains after excision, strangulation or seton. They are uncertain and little to be relied on.

8. A combination of several of these methods of treatment will often be found advisable.

Salivary Calculus. By H. B. BURNHAM, M.D., Epping, N. H.

J. H., aged 48 years, of spare habit and slender constitution, some fourteen years since was seized with a severe pain under the left side of his tongue. He applied to his family physician, who could give him no satisfactory information as to the cause or nature of his complaint; neither could he afford him any relief. He was induced to consult other physicians in his vicinity, and he did so with like results. In the mean time, a small tumor made its appearance on the under side of his tongue, near or at the seat of pain. He went to Boston and consulted the late Dr.——, who informed him that his disease was cancer, and gave him but little encouragement as to any permanent relief. He returned to his home, determined to abide the result of what he then supposed an incurable disease. From that time until about the first of February last, he has suffered paroxysms of severe and excruciating pain at different times. The tumor gradually increased in size, and the paroxysms of pain became more frequent, until it finally became inflamed, suppurated and burst, discharging a small quantity of pus and a calculus weighing fifteen grains, having the general appearances of ordinary renal or biliary calculi. He has since been entirely free from pain.—*Boston Medical and Surgical Jour.*

CHLOROFORM AS A HYPNOTIC.—Opium and lactucarium are almost the only two agents which induce sleep by a special sedative action; and they both have their inconveniences as well as their highly valuable properties. A hypnotic without these inconveniences would prove an agent of great value, and M. Fonssagrives, of Cherbourg, believes that chloroform is that agent, judging from his having used it with constant success since 1854, when it was recommended by Dr. Uytterhaven, a Belgian practitioner. Sleeplessness arises from different causes; sometimes it is the result of the persistence of a painful symptom which forcibly excludes repose; at others it constitutes an entirely nervous symptom originating in some moral sufferings, absorbing preoccupation, or too prolonged or too active intellectual exertion; while at other times it proceeds from a vicious habit of the cerebral centre. The sleeplessness becoming a cause of sleeplessness; or, finally, the sleeplessness may result from the abuse of hypnotic remedies, or may be an epiphenomenon of certain acute diseases. It is in these latter cases that chloroform is of especial service. The dose is small but effectual, namely, from five to ten drops.—*Bull. de Therap.*, tome lvi.

VITALITY OF TOADS.—Toward the year 1850, a workman, in the neighborhood of Blois (France), struck a mass of silex with his pickaxe, and saw a live toad jump out of the stone. At that period doubts were entertained as to the supposed indefinite vitality of toads, which had been deduced from the above-mentioned fact; and M. Dumeril showed that toads, having cartilaginous ribs, could introduce the whole body where the head would enter. These animals are fond of slipping thus into very small apertures and crevices; and hence the error about their vitality when confined within stone. M. Milne Edwards' father, in order to bring the matter under direct experiment, buried some toads in plaster, and where, from the porosity of the plaster, or the existence of crevices, air could penetrate, the creatures lived several weeks, and even months; one, in fact, lived thus for *eighteen months*, this being the only authentic fact of the kind. When, however, the plaster had neither porosity nor crevices, the animals were always found dead and dried up.

At a late meeting of the Academy of Sciences of Paris, the members present had an opportunity of breaking up masses of plaster, in which M. Seguin had imprisoned a viper and a toad in 1852. Both animals were found dead, and evidently dried up for a number of years.—*Lancet*, July 14, 1860.

RUPTURE.

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FOR THE SESSION OF 1860-61.

COLUMBUS, O.

THE next session of Starling Medical College will commence on Thursday, October 18, 1860, and will be continued until the 1st of March.

The Dissecting rooms for the study of practical Anatomy, will be open from the commencement of October.

The Museum of the Institution has been made very attractive by late receipts from France and Germany.

The College building is in complete order, the east wing having been entirely completed.

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S. M. SMITH, M.D.,
Professor of Theory and Practice.

FRANCIS CARTER, M.D.,
Professor of Obstetrics, and Diseases of Women and Children.

J. W. HAMILTON, M.D,
Professor of Surgery.

JOHN DAWSON, M.D.,
Professor of General and Special Anatomy and Physiology.

S. LOVING, M.D.,
Professor of Materia Medica, Therapeutics and Medical Jurisprudence.

THEO G. WORMLEY, M.D,
Professor of Chemistry.

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Subjects for dissection in the building, furnished at a moderate expense, on application to the Demonstrator of Anatomy, *and in no other way.*

There are two extensive Bookstores in Columbus, at which Medical works in great variety are sold at very low rates. Surgical, Obstetrical, and Dissecting instruments are readily obtained.

All letters of inquiry will receive prompt attention, if addressed to any member of the Faculty, or to S. M. SMITH, *Dean.*

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